DOCUMENT RESUME

ED 398 391 CE 072 161

AUTHOR	Folk, Karen Fox, Ed.
TITLE	Consumer Interests Annual. Annual Conference of the American Council on Consumer Interests (42nd, Nashville, Tennessee, March 27-30, 1996).
INSTITUTION	American Council on Consumer Interests, Columbia, Mo.
REPORT NO	ISSN-0275-1356
PUB DATE	Mar 96
NOTE	482p.
AVAILABLE FROM	American Council on Consumer Interests, 240 Stanley Hall, University of Missouri, Columbia, MO 65211.
PUB TYPE	Collected Works - Conference Proceedings (021) -- Reports - Research/Technical (143) -- Speeches/Conference Papers (150)
EDRS PRICE	MF02 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Adult Education; *Consumer Economics; *Consumer Education; *Consumer Protection; Day Care; Educational Attainment; *Educational Research; Information Seeking; *Money Management; Research Methodology; Research Reports; Research Utilization; Secondary Education

ABSTRACT

Among the 99 conference papers presented are the following: "Whither the Consumer Interest: The Role of Consumer Education and Research in an Era of Public Reinvention" (Colien Hefferan); "The Scientific Foundations of Consumer Advice: Some Comments" (E. Scott Maynes); "Self-Employment: A Viable Economic Alternative for the California Hispanic Population" (Patricia D. Olson, Virginia Solis Zuiker, Catherine P. Montalto); "Determinants of Information Search Behavior: The Case of Saving and Borrowing Decisions" (Yoon G. Jang); "An Analysis of Household Expenditures on Educational Goods and Services" (Sandra J. Huston); "Child Care: Parental Search and Decision-Making" (D. Elizabeth Kiss, Brenda J. Cude); "Hours of Employment and Undergraduate Grades" (Mary E. Pritchard); "Utilizing Focus Group Interviews for Testing Theoretical Framework Viability" (Julie Johnson-Hillery, Jikyeong Kang); "Factors that Contribute to the Wage Gap between Black and White Women" (Tiffanye H. Porter); "A Financial Crisis Clinic Supported by Consumer Affairs Students" (Wendy L. Reiboldt); "A Decade in Perspective 1985-94: A Content Analysis of the Journal of Consumer Affairs'" (Elizabeth M. Dolan, Frances C. Lawrence); "Income Sources and Education Expenditures for Single-Mother Families: Implications for Public Policy" (Yoon G. Jang); "Informal Money Management Education: Perceptions of Teens and Parents" (Cathy Faulcon Bowen); "Project-Based Learning for Consumer Voice and Customer Service" (John Kushman): "Perceived Usefulness of Credit and Insolvency Measures among Financial Planners and Educators" (Sue Alexander Greninger and others); "Consumers and Cyberspace: Inequitable Distribution of Information" (Alice Simon); "Welfare Reform and Self-Sufficiency in Wisconsin: Will It Work?" (Karen F. Folk); "Changes in the Child Support Enforcement Environment during the 1980s: Effect on the Educational Attainment of Young Adults" (Pedro M. Hernandez, Andrea H. Beller); "The Roles of Education and Regulation in Protecting Consumers: A Federal Reserve System Case Study of Uninsured Bank Products" (Jeanne M. Hogarth); "Consumer Information Meets the Information Highway: Old Dog--New Tricks?" (Lydia Shevchuk); "Determinants of Fathers as Primary Child Care Providers in Working Families" (David C. Burchfield); and "Parental Marital History and Child Measured Cognitive Development" (Michele L. Ver Ploeg). (KC)

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42nd Annual Conference
March 27–March 30, 1996
Nashville, Tennessee

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Consumer Interests Annual

Karen F. Folk, Editor

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CONSUMER INTERESTS ANNUAL

Volume 42

Karen Fox Folk
Editor

42nd Annual Conference

of the

AMERICAN COUNCIL ON CONSUMER INTERESTS

March 27 - March 30, 1996
Nashville, TN

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ISSN 0275-1356
Printed in the United States of America

Distributed by

ACCI
240 Stanley Hall
University of Missouri
Columbia, Missouri 65211
(573) 882-3817

PRINTED WITH SOY INK

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The 42nd Annual Conference of the American Council on Consumer Interests, March 27th to 30th in Nashville, drew participants and speakers from across the United States and around the world. In the Esther Peterson Policy Forum, those attending the conference had the opportunity to hear Colien Hefferan, USDA, reflect on the role of consumer policy professionals in an era of government downsizing. Two European consumer professionals, Erik DeGier, Consumentenbond, the Netherlands, and Peter Sieber, Stiftung Warentest, Germany, provided a fascinating comparison of consumer product testing procedures in the U.S. and European Consumer Unions. William Baer, Federal Trade Commission, addressed the role of antitrust enforcement in protecting the consumer interest in the Colston Warne Lecture. Luncheon speakers added to the diversity of topics considered in general sessions. Elizabeth Owen, TV Reporter and former Director, Tennessee Division of Consumer Affairs, provided a media perspective on consumer concerns while Andrea Beller, University of Illinois family economics researcher, related her research on child support to policy recommendations for improving the well-being of children.

Forty manuscripts were submitted for consideration as refereed papers with 25 accepted for presentation (63% acceptance rate). Refereed and invited papers covered a variety of topics including the latest analyses from the consumer expenditure survey, banking and the alternative financial sector, food safety and other food-related research, welfare reform, health care expenditures and policy, consumer education strategies for cyberspace, as well as fraud, credit and consumer debt, and international consumer issues. There were 13 refereed poster displays, plus 3 refereed posters submitted as papers. Accepted posters were chosen from 16 submissions (84% acceptance rate). There were 6 student papers submitted with 4 accepted after review. In addition to the refereed process, 14 organizations accepted ACCI's invitation to provide an exhibit and contact person at the meeting. Sharon DeVaney, exhibits chair, made special arrangements to have exhibits available during the opening reception as well as at the usual times. This increased the opportunity for those attending to view exhibits and consult with exhibitors.

Program chair, Cathy Zick, and poster chair, Barbara Rowe, spent many hours assembling the superb offerings throughout the conference. Capitalizing on the pleasant facilities provided by the Sheraton Music City Hotel, Etta Mae Westbrook, local arrangements chair, continued working throughout the conference to keep things running smoothly. Many thanks to her and her student assistants for making the meeting a success. Attendees also enjoyed the ACCI reception at the Tennessee State Museum offering an opportunity to network with other consumer professionals and students and to learn from the museum exhibits.

The completion of these proceedings was aided greatly by the competent wordprocessing of Jean Storch as well as the expert advice of Anita Metzen. Special thanks to Dean Hamilton McCubbin, School of Human Ecology, UW-Madison, for funding the majority of the secretarial help. With the 1995 proceedings production experience to guide us, the work of assembling and standardizing the nearly 100 submissions to this 1996 volume went smoothly. It was a pleasure to facilitate the publication of the work of so many consumer researchers and educators.

Karen Fox Folk
University of Wisconsin-Madison

1996 ANNUAL ACCI CONFERENCE

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PAPER AND POSTER REVIEWERS

Thanks to the following people who so generously served as reviewers for the refereed papers and posters presented at this conference.

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Reviewers of Graduate Student Papers for 1996 Conference

Thanks to the following young professionals who served as reviewers for the refereed graduate student papers presented at this conference.

Paul Camp, Purdue University
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Surf's Up: Antitrust Enforcement and Consumer Interests in a Merger Wave

Editors Note: This is an abridged version of the Colston Warne lecture given by Mr. Baer at the ACCI conference. An unabridged version will be published in The Journal of Consumer Affairs.

William J. Baer, Federal Trade Commission[1]

It is a pleasure to be here, and I am honored to follow the many leading figures in the consumer movement that have preceded me to present the Colston E. Warne Lecture, including Mary Gardener Jones, Esther Petersen, Steve Brobeck, Mark Green, and my former boss and good friend, Michael Pertschuk.[2]

Today, I would like to share with you some thoughts on how consumers are served through government enforcement actions against anticompetitive mergers. Virtually ever week, the business media report on a new megamerger that potentially could affect many millions of us in one way or another. Media giant Time-Warner proposing to merge with Turner Communications. Defense behemoths Lockheed and Martin-Marietta combining. A large pharmaceutical firm, Marion Merrill Dow, acquired by Hoechst AG. Columbia/HCA buying Healthtrust and 120 more hospitals. Many mergers are followed by layoffs as companies shed what they view as redundancies -- otherwise known as workers. The number of new mergers is staggering. Last year, 2,816 mergers and acquisitions were reported to the FTC and the Department of Justice. And those are only the largest transactions. A total of nearly 9,000 transactions occurred in 1995 (Henry, 1996). The surf is up and rising.

The title of this article is, of course, a metaphor, but one that may raise a number of questions for consumers. What is the appropriate role of federal antitrust enforcement in this environment? The FTC and the Department of Justice had a near-record number of merger enforcement actions last year, but compared to the deluge of reported mergers, we challenged only a very small percentage -- less than 2% of the large, reportable transactions. What is the public policy regarding mergers? Who are we charged with protecting, and are we doing enough? What mergers do we challenge, and why? Or, as Ross Perot's 1992 vice presidential running mate, Admiral Stockwell, stated in debate: "Why am I here?"

In addressing those questions, I'd first like to review some of the history of the merger laws and their underlying purposes. Federal merger law has a long and interesting history. Born into an age when the business environment was much different than it is today, our merger law has been interpreted, amended and applied with various goals in mind. What were those goals, and how are they applied today? Are the merger laws concerned with large concentrations of economic power? Are they intended to preserve and protect small businesses against takeover by larger competitors? Are they intended to preserve diversity among business enterprises? Are they intended to protect jobs? Is enhancement of economic efficiency the guiding star of how merger laws should be applied? Or is the proper focus the protection of consumers against anticompetitive price increases? In truth, each of these goals has played a part in how merger law came into being and what it has become today. And each is related in some way to the well-being of consumers. The difficult task is to meld these interests and goals into a coherent merger policy.

A Brief History of Merger Law

The Original Clayton Act

The basic antitrust law that governs mergers, Section 7 of the Clayton Act, was enacted in 1914, the same year that the Federal Trade Commission came into being. Legislative history has it that the new law was born out of dissatisfaction with the way the federal courts were handling mergers under the Sherman Act, an older antitrust statute enacted in 1890. As you know from your history books, the turn of this century was the era of so-called robber barons and big business trusts -- large combinations of companies dominating entire industries. The railroad trust. The oil trust. The steel trust. The tobacco trust. And many other trusts, numbered, perhaps in the hundreds. Interestingly, Colston Warne has noted that the consumer movement in the U.S. began at about the same time. He said:

> "The early growth of the consumer movement blends into the antitrust and pure food and drug aspirations... at the beginning of the twentieth century, and the consumer movement really got going full steam after the turn of the century." (Morse, 1993).

The consumer movement and antitrust thus are kindred in time as well as purpose.

Why was it necessary to add a specific merger law? Although the Sherman Act prohibited anticompetitive agreements, the Supreme Court did not apply the statute rigorously to aggregations of economic power through mergers and acquisitions. As a result, numerous companies were being acquired through stock acquisitions, and vast wealth and corporate control were being amassed in relatively few hands.

It was in this setting that they Clayton Act, and the Federal Trade Commission, came into being. The Clayton Act prohibited a number of specific business practices thought to be inimical to our economy, including, anticompetitive acquisitions. The FTC was to play a central role in the enforcement of the new law. The merger provision, Section 7, prohibited the acquisition of the "stock or other share capital of another corporation ... where the effect of such acquisition may be to substantially lessen competition between the corporation whose stock is so acquired and the corporation making the acquisition..."

By using the words "*may be* to substantially lessen competition," Congress indicated that it wanted to be doubly sure that *potentially* anticompetitive transactions would be stopped. If there were competing interests, Congress came down on the side of intervention. It did not require proof that an acquisition definitely *would* lessen competition substantially, but only a reasonable probability that it would. Another important aspect of the new merger law was that it was intended to arrest anticompetitive tendencies before they could develop into full-blown violations of the Sherman Act. The intent thus was to reach *incipient* monopolies and trade restraints outside the scope of the Sherman Act.

What goals did Congress seek to serve by enacting this new statue? There were many interests involved. But there is no doubt that Congress was concerned about the monopoly power of the great industrial trusts. Protection of consumers was one of the explicit goals. Some were concerned that the trusts used their power unfairly against smaller firms. The power of the trusts over labor was another major concern. In addition to their economic strength, the trusts also enjoyed a substantial degree of protection from strikes. Federal courts granted injunctions under the Sherman Act to crush strikes and limited the ability of workers to organize.

Congress addressed this in Section 6 of the Clayton Act, which declared that "the labor of human being is not a commodity or article of commerce." The new law also declared that labor organizations are not conspiracies in restraint of trade, and that the antitrust laws shall not prohibit or restrain individual members of labor organizations from carrying out their legitimate objectives. In other words, workers could act jointly in bargaining with employers without fear of prosecution under the antitrust laws.

There was also a political dimension. The big trusts were viewed as seeking not only industrial domination, but "political supremacy" as well. There were concerns about usurpation of political power by the wealthy and the privileged few. Some feared that this trend would lead to socialism "as the properties of all the people pass into the hands of a few trust magnates." Competition, on the other hand, was viewed as "the best environment for the advancement and the welfare of mankind in the individual initiative, the individual independence, and the individual responsibility."

What can we learn from the enactment of the original Clayton Act about the goals Congress sought to achieve? I think one thing is clear--Congress sought to prevent abuses of economic power from business combinations that approached or reached monopoly proportions. Congress had a number of different reasons for wanting to do so -- that is, those abuses were perceived to have a number of different effects, some non-economic, on American society -- but at least one clear target of the legislation was the abuse of what we antitrust lawyers call market power -- the ability to raise prices above competitive levels.

That is not the end of the story, however, because the original Clayton Act left a number of gaps in its coverage, and would require amendments some year later. As originally enacted, the merger provision of the Clayton Act prohibited only the acquisition of the stock of another corporation. It did not apply, either expressly or by judicial construction, to the acquisition of assets. The focus of the original Clayton Act on stock acquisitions probably was intentional. The primary concern at the time was the development of holding companies and the secret acquisition of competitors through the purchase of all or parts of a competitor's stock. But it was soon recognized that the effect of an asset acquisition could be the same as that of a stock acquisition, and the Federal Trade Commission repeatedly urged that the loophole be plugged. However, the country was preoccupied with other events in the years that followed. World War I; the Depression; the New Deal recovery; and the World War II. But following the second world war, a new merger movement caught the attention of legislators. Congress enacted the Celler-Kefauver amendments in 1950, making the Clayton Act applicable to asset acquisitions and to acquisitions involving firms other than direct competitors.

The 1950 Amendments.

A dominant theme driving the 1950 amendments was a fear of what was considered to be a rising tide of economic concentration in the American economy. Debate in the House and Senate repeatedly raised that theme. In 1909, the 200 largest non-banking corporations owned about one-third of all corporate assets; in 1928 they owned 48%; in the early thirties they owned 54%; by 1940 they held 55%. Aggregate concentration increased even further during the second World War, when the federal government itself enabled large corporations to become larger as part of the war production mobilization efforts. Some viewed the concentration trend as a threat to the entire economic, social and political fabric of the nation. Some were interested in retaining local control over industry and the protection of small businesses in order to disperse both economic and political power. Another interesting feature of the merger movement of the 1940s was that many mergers involved the acquisition of small companies by very large corporations. Unlike the era of the business trusts in the late 1800s and early 1900s, the merger movement of the 1940s generally did not involve the merger of large companies; instead, small companies were being swallowed up. This explains the focus on small businesses during much of debate over the legislation.

Apart from competitive impact, acquisitions of small businesses raised several other issues. Some argued that the law should accommodate the owners of small businesses who wished to sell their business. Supporters of the legislation responded that some transactions were not purely voluntary -- small firms were being forced out of business by the tactics of large corporations. In that respect, the issue involves the possible abuse of market power by a large firm. Others saw lost opportunities for entrepreneurs. But more fundamentally, the disappearance of small firms was seen to threaten the fabric of a decentralized democracy. Representative Celler noted that Thomas Jefferson had tried to include protections against monopolies in the Bill of Rights. Senator Kefauver quoted President Lincoln on the threats to the Republic posed by uncontrolled concentration of wealth and economic power. some viewed the proposed legislation as a fight "for the survival of democracy."

In sum, the Clayton Act -- the source of our merger enforcement authority today -- presents something of a mixed bag of values and goals. As in other areas of law, the federal courts had the task of deciding how the Clayton Act was meant to be applied. Given the mixed and not always consistent purposes that underlie the statute, it is not surprising that judicial interpretations evolved over time.

The Supreme Court and Merger Enforcement in the '60s

Those competing considerations underlying the Clayton Act's prohibition on mergers that would tend substantially to lessen competition created a difficult dilemma for the courts. The cases of the '60s reflect a merger law in search of a consistent theory. We see mergers of two small players in markets with lots of competitors condemned almost as readily as mergers of very large players in very concentrated markets. This led one Supreme Court Justice to say, in his dissent in a leading case, *Von's Grocery*: "The sole consistency that I can find is that in litigation under § 7, the Government always wins." It may not have been quite as simple as that. One could argue that the Court was being faithful to one of the sentiments consistently expressed during the Cellar-Kefauver hearings -- that trends toward market concentration should be nipped in the bud. One could also argue that these cases reflect a judicial philosophy -- and an enforcement philosophy -- that sided in favor of government intervention to prevent increases in concentration. But these are not rules of law that consciously consider consumer interests. They don't help us distinguish the "bad" mergers from the good. They lead to a result, as Justice Stewart suggested, that most mergers are bad. That would not be consistent with economic theory or the way markets actually work, and it would not be good for consumers. I'll explain that as I briefly describe three of the leading cases of the '60s, *Brown Shoe*, *Philadelphia Nat'l Bank*, and *Von's Grocery*.

In 1962, the Supreme Court decided the *Brown Shoe* case, which is still cited today as an important statement of several legal principles on mergers. But the Court's application of those principles to the facts of that case has been the subject of substantial criticism. The Supreme Court expressed concern with a merger that would allow one retail shoe chain to account for as little as 5% of retail shoe sales in community. Even though there had been prior mergers in the industry, the market was still, in the Court's words, "fragmented". In many cities there were still a large number of competitors, those markets were not very concentrated. But the removal of even a relatively small competitor from the market was thought to present a significant threat to competition.

What is noteworthy about the *Brown Shoe* case is that the merger did not appear likely to create market power -- the ability of a firm, such as a chain of shoe stores, to raise prices above competitive levels. Indeed, by insisting on blocking an acquisition in a market that was unconcentrated in order to protect small businesses, the Court chose to ignore the possibility that a somewhat larger shoe store chain would be more efficient and result in *lower* prices for consumers.

In 1963, the Court decided another landmark case, *Philadelphia National Bank*. This case, too, involved a history of prior mergers in the relevant area, but, unlike *Brown Shoe* and the late decision in *Von's*, the merging parties were big players in the market. They were the second and third largest commercial banks in the Philadelphia area, and their combined share of the market would have exceeded 30%. Moreover the market already was substantially concentrated.

Philadelphia National Bank thus involved precisely the kind of acquisition that Congress sought to prevent by amending the Clayton Act. That the Court found the merger to be unlawful is not surprising. What is important are the rules of law the Court established in the case. One of them is that there should be a strong (but rebuttable) presumption of illegality for mergers that produce a firm with an "undue" percentage share of the market and result in a significant increase in concentration. The court believed that those mergers are so inherently likely to lessen competition substantially that they must be enjoined in the absence of evidence *clearly* showing that the merger is not likely to be anticompetitive. In other words, mergers in concentrated markets were so likely to create market power and put consumers at risk of anticompetitive prices that they were presumptively unlawful. The Court based this presumption in part on the economic theory that "'[c]ompetition is likely to be greatest when there are many sellers, none of which has any significant market share.'" We thus see in *Philadelphia National Bank* the seeds of an economics-based examination.

Then in 1966 came *Von's Grocery*, another well-known (some would say notorious) case from those times. That case reverted to a *Brown Shoe* kind of analysis, relying perhaps even more heavily on a numerical count of competitors and the beginnings of a trend toward concentration. The Supreme Court held unlawful a merger of two grocery store chains holding a combined share of 7.5% of the grocery market in Los Angeles, where the four leading firms accounted for 24.4% of sales, and the top eight firms accounted for 40.9%. The total number of grocery stores in Los Angeles was in the thousands. The market share and concentration figures did not approach those in *Philadelphia National Bank*. Yet, the Court did not engage in an analysis of likely competitive effect, other than noting the trend toward concentration.

How can we explain these different approaches? There are several possibilities. First, it is possible that the Court was simply uncertain about the merger standards of the amended Clayton Act. Second, given that there were substantial factual differences among the three cases, and the different goals articulated in the legislative history of the Clayton Act, it is possible that the Court applied in each case the merger standard that best fit the facts of the case. The Court arguably was not being inconsistent, because those different standards can be traced to the legislative history. This explanation is consistent with a hypothesis that I've already mentioned -- that each of these cases reflects a judicial philosophy and an enforcement philosophy that sided in favor of government intervention to prevent increases in concentration, and the Court used the standard that fit the facts of the case.

That "pick and choose" approach, despite its flexibility, is not necessarily in the best interest of consumers. The *Brown Shoe* and *Von's Grocery* cases illustrated the potential consequences of focusing enforcement policy on one goal or interest, without fully considering the alternatives. This is brought out most sharply in *Brown Shoe*, where the consequence of the Court's decision was to protect small competitors at the expense of consumers. The Court in 1962 recognized a tension between the goals of protecting consumers and protecting small businesses, but seemed willing to sacrifice lower consumer prices for the latter.

Von's Grocery may have involved a similar trade-off. Chain grocery stores may enjoy some lower per-unit costs than independent grocery stores. That benefit likely would be passed on to consumers so long as the market remains competitive. The question, then, is whether the increase in concentration in *Von's* posed a serious threat to competition and consumers. In other words, does a supermarket chain with only 7% of sales in Los Angeles have the ability to soak consumers with higher prices? Today, many of the antitrust field doubt that competition was seriously threatened. If that is correct, a consequence of *Von's* is that small businesses were protected at the expense of consumers.

What is noteworthy about *Brown Shoe* and *Von's* is that, to the extent the court balanced consumer interests against small businesses' concerns, it sided with small businesses rather than consumers. Whatever the reason, the merger law of the 1960s has been described as "by far the most stringent...in the world." And it was a law that seemed, in the words of Robert Brok, to be "at war with itself," pursuing Congressional purposes -- protection of small business, hostility to small increases in concentration, and lower process to consumers -- that were not mutually consistent.

Changing Directions in the '70s

The Court changed course in the mid 1970s. The focus on preserving competitors for numbers' sake, deconcentrating markets and social goals shifted to a critical economics-based examination of market power, and whether and how such power might be exercised. This is reflected in the Court's decision in *United States v. General Dynamics Corp.*, which remains the most recent decision by the Supreme Court on substantive merger law. The case involved the merger of two firms engaged in the production and sale of coal. The Court held that General Dynamics' share of the market after the acquisition, while within the range that resulted in the condemnation of mergers in cases such as *Von's Grocery*, was not an accurate indication of the company's competitive position, because a substantial portion of its coal reserves were already committed under contract for future sales, and it had little likelihood of obtaining additional reserves. The Court found that the firm lacked the capacity to exercise market power, either alone or in combination with other firms.

The Court also began to rethink how to analyze other antitrust issues. Antitrust law in non-merger areas began to focus heavily on the market effect of business conduct, either in terms of anticompetitive effect such as output reduction and price increases, or procompetitive effect such as greater efficiencies. For example, in *Continental TV, Inc. v. GTE Sylvania, Inc.*, the Supreme Court overruled its own precedent and held that it no longer was automatically (perse) illegal for a manufacturer to restrict the sales territories of its distributors or retailers, or the types of customers to whom they could sell. Instead, such "vertical" restraints would be analyzed under a legal standard called the "rule of reason," balancing any anticompetitive effects against procompetitive benefits generated by the restraint's efficiencies. The rationale for the Court's new approach was the recognition that such territorial and customer restrictions could be efficiency-enhancing, i.e., they might lower costs or stimulate greater competition between brands. For example, distributors and retailers might invest more in sales efforts if they have protected territories or customer groups, because the investments would not be lost to competitors who steal away customers. As a result, such restrictions could result in greater sales for the manufacturer. Although there might be less competition among the dealers in a particular brand of product, overall competition in the market would not be harmed, and perhaps would be enhanced, if there were enough competing brands.

These developments were widely associated with the so-called "Chicago School" economic ideology. A basic premise of the Chicago School approach is that the sole goal of antitrust is (or at least should be) the maximization of "consumer welfare". (Rule & Meyer, 1988) This term has a special meaning to some economists, however. It does not necessarily mean, as the words might suggest, that a particular transaction will lower prices to consumer like you or me. Rather, it refers to the aggregate wealth of the nation. The theory is that consumers as a group will be better off by maximizing aggregate national wealth, and that the way to do this is by putting resources to their best use. the economist's term for that is maximizing allocative efficiency. Thus, if a merger promises to result in a more efficient use of resources, a proponent of this theory might argue that the merger should be allowed even if the merger firm gains market power and increases prices. The firm could either put the increased profits to productive use itself, or it could increase dividends for shareholders to reinvest in other presumably productive endeavors. This is a close cousin to the argument in favor of dramatically lowering the capital gains tax rate, to encourage new investment in productive assets and increase national economic activity. The Chicago School denies that this approach is anti-consumer. On the contrary, its basic premise is that by maximizing allocative efficiency, all consumers ultimately will benefit.

A related theoretical development that followed a little later, in the early '80s, was the theory of "contestable markets." In a nutshell, this means that if entry into a market is easy and is easily reversible without substantial cost, the market is "contestable" because new firms will be attracted by high profits, and thus the threat of entry will constrain the behavior of the incumbent firms. Combined with the Chicagoan belief that true barriers to entry are very few, the contestable markets theory provided a basis for arguing that even mergers in highly concentrated markets were not likely to result in sustainable market power.

The contestability theory had seductive appeal for many, but if the theory is applied too readily, without a thorough examination of entry conditions, the result may be a highly concentrated market and higher prices.

BEST COPY AVAILABLE

Several observers cite as an example the airline industry, where the Department of Transportation applied the theory to approve a number of airline mergers in the 1980s. Airline markets were thought to be contestable because airplanes can readily be moved from the routes to serve those routes where prices are substantially above costs. Subsequent experience and economic evidence suggests that wholesale application of the theory to that industry may have been naive. Proponents of the theory may have failed to take into account the fact that it takes more than an airplane to begin flying a particular route, and that some of those requirements might not be obtained as readily as airplanes -- landing slots, for example. The result may be higher prices and reduced service for consumers.

There was another development during the late 1970s -- a national mood change that placed growing emphasis on productivity. This development was influenced by growing inflation, lower productivity, an increasingly negative balance of payments, and increasing concerns about our ability to keep pace with aggressive foreign competition. The last point -- foreign competition -- is worthy of particular attention. It is a factor that was not present during the periods leading to the 1914 and 1950 merger legislation. The economy then was much more insular than it had become by the late '70s. The competitive significance of imports and the establishment of foreign-owned manufacturing operations in the U.S. were not issues in the legislative debates. But by the late '70s, the competitive dynamic in the market had changed. Foreign competition was here.

Thus, for several reasons, the stage was set for a dramatic change in antitrust. By the late 1970s, there was a growing recognition among many antitrust scholars, practitioners and the enforcement agencies that the '60s approach -- the focus on almost any increase in market share -- was not always beneficial for consumers. The agencies turned to new model. The central goal of merger policy, as reflected in new guidelines announced in 1982, was not simply to prevent undue concentration, but to prevent mergers that may create or enhance market power or facilitate its exercise. As I noted before, market power is defined as the ability to raise prices above competitive levels, or to maintain output below competitive levels. In other words, firms could increase prices unjustifiably, or create a product shortage which would drive up prices. A group of firms may be able to exercise market power collectively by colluding, or a single firm might have market power. Market power can be exercised by affecting price, output, quality or service directly, or more indirectly through tactics such as excluding or disadvantaging competitors. Consumers can be harmed because, by definition, they lack sufficient suitable alternative suppliers when firms have market power.

The theory underlying the merger guidelines policy of the '80s -- and today -- is that high market concentration can facilitate collusive behavior, and it can sometimes result in single-firm market power. Collusion could occur in several different ways. The most familiar is garden variety price fixing, where competitors expressly agree on the price they will change. In addition, a highly concentrated market can also facilitate a more sophisticated and subtle kind of collusion that is difficult to detect. There are various names for it, such as "tacit collusion" or "coordinated interaction." What it means, essentially, is that in some situations firms don't have to collude explicitly in order to reach some sort of understanding that each will be better off if they don't compete aggressively against each other. It is a mind game of sorts. In fact, in economic jargon, the study of such behavior falls within a broader discipline called "game theory."

In one sense, this economic theory of the cause and effects of market power was not new. It was recognized during the Congressional hearings on the 1950 amendments to the Clayton Act, and it was recognized and applied by the Supreme Court in *Philadelphia National Bank*. What was new was the view that concern with market power over pice would be the principal focus of Clayton Act merger enforcement.

Although the new guidelines perhaps did not go as far as some Chicago School followers might have wished, the guidelines did benefit from the Chicagoans' questioning of the conventional wisdom. The thrust of the policy changes reflected in the 1982 and 1984 revised merger guidelines was generally well received, even by some who criticized the government's actual enforcement efforts. The problem, the critics claimed, was that the government in the 1980's did not actually apply the new merger guidelines. Relatively few enforcement actions were brought, leading some commenters to charge that the government had effectively abandoned their own guidelines. One study reported that the federal enforcement's enforcement rate fell by more than two-thirds, to 0.7% of proposed mergers during the 1982-1986 period, from 2.5% in the 1979-80 period.

Looking back, the *actual* enforcement policy that was applied in those days may have effectively changed the standard for challenging mergers. Instead of using the standard mandated by the Clayton Act, which prohibits mergers that "may tend substantially to lessen competition," the Reagan Administration's policy seemed to apply a presumption that mergers *would not* decrease competition except in extreme cases.

A defender of the Chicago School approach (an antitrust official during the Reagan Administration) stated at the time that the Chicagoans are not really about whether markets work perfectly, but whether, "given a problem in the market, government intervention will result in a net benefit, a net improvement, or whether it's just as likely as not to make things worse." In other words, generally trust the competitive process to work unless you are near certain that antitrust will make things better.

So we came out of the mid '80s with more analytical rigor, a focus on "consumer welfare" as the bottom line concern of antitrust, and some insighful merger guidelines that government enforcers largely disregarded in favor of a presumption that government intervention was more likely to make things worse than to make things work better.

Merger Enforcement Policy in the '90s

Merger enforcement experienced an upturn beginning in the late '80s. More horizontal mergers were challenged, and the Commission renewed enforcement efforts on vertical and potential competition theories. What accounts for this change of events? A continuing merger wave is one answer. There was a sharp upswing in mergers in 1987 and continuing through 1990, and another one beginning in 1993 and continuing today. With more transactions, one would expect to find more that are problematic. But it is fair to ask whether there is anything more fundamental -- a change in policy? Have we returned to the '60s approach of general hostility to mergers and combinations? Are we applying different standards than those the agencies used in the 1980s? The Commission and the Department of Justice jointly issued new horizontal merger guidelines in 1992, but the fundamental policy stated in the 1984 guidelines did not change. The policy still is to prevent mergers that may create or enhance market power or facilitate its exercise.

What has changed is our enforcement philosophy. The merger guidelines we apply are basiclly the same, but we may, ironically, have more faith that they can be intelligently applied than did our predecessors who authored them. We no longer assume that government will necessarily get it wrong and only can do harm; rather, we apply the available tools in an evenhanded way to advance consumer interests, and thus further the various goals that Congress established.

Professor Fox (1977) has written that antitrust policies could be viewed along a continuum, with the "small is beautiful - large numbers of competitors are important" camp at one end, and the "free market - big is beautiful - government is burdensome" camp at the other end. She also notes that "economic ideas are usually part and parcel of social and political philosophy. I think it is fair to say that there has been a change in enforcement philosophy at the antitrust agencies. We have moved along the policy continuum away from the Chicago School, certainly not to the other end, but enough to make a real difference. Thus, our goal today is to protect consumer welfare, but we use that term in a broader sense than the Chicago School notion of the term. It is neither necessary nor appropriate to maintain that the merger laws are concerned only about achieving the best allocation of resources. That is not a fair reading of the legislative history. Merger efficiencies do matter, but so do price increases that consumers have to pay, reductions in quality of products, less service, less variety of goods and services and reductions in other forms of rivalry such as innovation and research and development. We can agree that many transactions are intended to achieve efficiencies, but we won't *assume* efficiencies in any particular case -- we have to examine what the evidence tells us. Nor do we have to assume away the other goals identified in the legislative history.

How does protecting the competitive process serve the varied goals underlying the Clayton Act? One of the goals was to preserve economic opportunity for small businesses. If we prevent mergers that threaten market dominance, if we prevent mergers that would erect barriers to entry, if we allow weak, inefficient firms to merge so that they can be stronger competitors, we preserve economic opportunity. And if we allow the owner of a small business to sell the business to another firm, that, too, is consistent with economic opportunity. The freedom to operate a business is not complete without the freedom to exit that business.

Is merger policy today consistent with the Congressional goal of preventing a rising tide of economic concentration? I think so. By preventing undue increases in market concentration, merger policy is also consistent with other interests that certain legislators sought to protect in enacting the Clayton Act. If we have competitive markets, free from artifical restraints, we have economic opportunity, entrepreneurs have a fair chance to control their own destiny, the free enterprise system has the maximum opportunity to flourish, and small businesses have a fair opportunity to compete. The diversity in such a market also is conducive to "political democracy."

Competition also serves well the interest in efficiency. The inefficient will be spurred on to be more efficient, for otherwise they will find it difficult to survive in a competitive market. And firms seeking a competitive edge will be motivated to innovate and to be more efficient than their competitors.

Our focus on the competitive process serves each of the Clayton Act interests well, but perhaps not equally or perfectly. For example, competitors are not protected for the sake of numbers, or for the sake of smallness. But it was not the intent of the statute or of the Court simply to protect competitors. The objective remains the same, but we now have a much better understanding of what is necessary to protect competition. It doesn't require vast numbers of competitors in any given product market. And some balancing of interest is inevitable.

Translating Policy into Action: Merger Enforcement and Consumer Interests in the '90s

What does current enforcement say about the role antitrust plays in a merger wave? It suggests a certain humility about the role of antitrust in addressing all aspects of a dynamic economy. We are not the agency and ours is not the law that resolves all the difficult questions about how our economy should be organized. For example, we are not the ones who should decide whether Wal-Mart or some other megastore should be allowed to come to town with lower prices but possibly distruptive effects on the local economy. Independent retailers, main street as we know it, the quality of life and small town values, all may be threatened. But it is within our competence to assess the effects on competition and on consumers. Thus, we do know that Wal-Mart is very efficient and can pass on the benefits of that in lower prices to consumers. But whether that benefit is worth the trade off in other costs is a political decision for the community, in another forum.

The same is true of the effects of a merger on the local economy. The combined firm may have lower costs and be able to offer lower prices to consumers, but the lower costs may be the result of a consolidation or restructuring to operations -- in other words, lost jobs. And those lower costs may make it difficult for smaller firms to compete resulting in a further loss of jobs. We know that the effects can be far-reaching. But the antitrust laws don't give us the authority to deny a merger because job losses will result. Nor would it be desirable to have that authority within the anitrust laws. If there is any lesson to be learned from the merger enforcement of the '60s, it is that we cannot have a consistent approach to mergers if we have inconsistent objectives. If a merger does not pose a serious threat to competition, there is a fundamental inconsistency between the goals of achieving lower prices for consumers and protecting jobs that may be either redundant or unnecessary to the effective functioning of the business. Similarly, as I noted earlier, there would be conflict between consumer interests and other goals or interests such as preserving small businesses.

That tension between interests is what has led the courts and the enforcement agencies to focus on economic harm to consumers as the best proxy for harm to society, and to let the political process sort out these other issues. On the local level, that means zoning boards and town councils debating Wal-Mart's entry. At the state and national level it means debates in the legislature on how to cope with worker severance and retraining and the bottom line question of who pays for addressing those effects of mergers.

The antitrust laws best serve the consumer by focusing on the competitive process. A competitive market involves not only opportunity for success but also freedom to fail and ability to adjust to the competitive environment. Competition is not painless, but the alternative would be worse. If we block mergers on account of jobs or to preserve small businesses for the sake of smallness, that will handicap the economy and deny consumers of the lower prices that result from productive and distribution efficiencies.

Antitrust's focus on economic harm to consumers also serves us well by ensuring that we intervene only when there is evidence that tangible harm is likely. For example, it is easy to become alarmed when we see a series of megamergers in a particular industry, such as Disney buying Capital Cities/ABC, Westinghouse buying CBS, and Time-Warner buying Turner Communications. The fact that media giants are involved might make us especially nervous about a diminution of independent voices and means of expression.

A well focused, economics oriented antitrust analysis can help us sort out the issues. If media became too concentrated, that is likely to be reflected not only in First Amendment concerns but also in economic costs to consumers. Antitrust can assess the likelihood of that by looking at such things as the proper definition of the relevant market (i.e., what forms of media compete for the conveyance of a particular form of communication), the number and types of firms that compete in that market, and barriers to entering that market. For example, in connection with the three media mergers just mentioned, is the relevant market limited to broadcast and cable television, or should Direct Broadcast Satellite (DBS) transmission be included? And what about the potential for entry by telephone companies?

Where we see evidence of tangible consumer harm, that tends to confirm subjective concerns about particular mergers. But where we don't see evidence of tangible consumer harm, we need to question whether a change of ownership is only that, and less of a threat to democratic values and First Amendment rights than we might otherwise think.

Now that I've outlined my view that antitrust enforcement is not equipped to defend the notion that small is beautiful, that efficiency benefits should be sacrificed to preserve small firms or that any job loss is unacceptable, what is our purpose? To paraphrase Admiral Stockwell again, "why are we here?"

Let me cite a few recent examples of what our pursuit of consumer welfare means for the average consumer and ordinary citizen. The benefits are felt at both the local and national levels, some of it direct and some more indirect.

At the local level, we recently prevented the merger of supermarkets in St. Louis and Boston. Not in *Von's*-type markets, but in highly concentrated markets where consumers would have been left with few alternatives and inevitably would have faced higher prices. We also prevented the merger of funeral homes in small communities throughout the South, and we challenged hospital mergers in Grand Rapids, Michigan, Central Florida, and other communities in the U.S. In each of these places, merger enforcement sought to preserve the benefits of competition so that consumers would not experience higher prices or lower service as a result of a merger.

In some other cases, the benefit to consumers was more indirect, but no less real. For example, the Commission preserved the benefit of competition in the pricing of natural gas to industrial customers in Salt Lake City. The Commission also challenged mergers involving intermediate products, such as industrial ovens used to make glass. The costs of imputs and intermediate products obviously show up in the cost of final consumer products.

Other cases benefited consumers directly on a national scale. For example, the Commission prevented the merger of Western Union and MoneyGram, the only two firms that provide consumer wire transfer services. Consumer money wire transfers are a quick, convenient and secure way of transferring funds between two parties. These services are frequently used by consumers who don't have bank accounts -- surprisingly, they account for about 25% of U.S. households -- and people who are temporarily stranded without adequate funds, such as students and travelers. Until a few years ago, Western Union was the sole provider of the service, and it charged a monopoly price of $38 for a $500 transfer. MoneyGram entered at half the price, and provided aggressive competition. Western Union responded by dropping its price to $29. MoneyGram's parent company then tried to buy Western Union, which would have eliminated the competition between them. The commission took steps to keep MoneyGram independent, which should save consumers $15 million to $30 million per year.

Some of what we do is focused specifically on protecting competition for tomorrow. For example, last year the Commission took action against Hoechst AG's acquisition of Marion Merrill Dow ("MMD"), which would have produced the third-largest pharmaceutical manufacturer in the world. At the time, the two firms did not compete against one another with the same drugs, but they were poised to do so in the near future. MMD marketed Cardizem, a leading medication used by millions of patients who suffer from high blood pressure and angina. Cardizem is a form of diltiazem, a $1 billion market, in which consumers paid $500 to $1000 per year for their medication. Hoechst was on the verge of introducing a competing product, Tiazac. If Hoechst had gained control of both Cardizem and Tiazac, it could have deprived consumers of meaningful competition between the two drugs.

The commission's order produced immediate benefits for patients who need once-a-day diltiazem. A few days after the Commission issued the order, Hoechst removed the obstacles to effectively marketing the drug, and the FDA approved Tiazac 24 hours later. Tiazac was recently introduced into the market, with a list price 25% below Hoeshst/MMD's Cardizem. The actual price to the consumer is probably even lower, around 30-35% below Cardizem, because of volume discounts at the wholesale level. For the average patient who switches, that means a yearly savings of $250 or more. We understand that market acceptance has been good, and sales of Tiazac may exceed projections. Market-wide, that could mean a savings of $30 million or more per year.

It is noteworthy that two cases alone -- *Western Union/MoneyGram* and *Hoechst/MMD* -- could produce $60 million in annual savings, exceeding the Commission's current annual budget for antitrust enforcement.

To sum up where we are today, we are trying to keep our eyes on the ball, focusing on a merger policy that delivers consumer benefits from competitive markets. Colston Warne once said: "The central faith of the consumer movement is that free choice lies at the very core of democracy in an economic system." In summing up the philosophy of Consumers Union, he explained the need for truthful information about products:

In the American economy, information about

> products is assumed in basic economic theory. People are assumed to have the competence to buy, and if they maximize their utility, they will bid for the articles they want most, and the price reflects the equating of supply and demand. All this might work some day if people were rational, knew what they wanted, knew the characteristics of goods, weighed their decisions, and had the truth about the market.

His views were eloquently stated, and are not unlike our own. Freedom of choice is not complete, however, if markets are not competitive. Consumers may not have the choice of products and services they would otherwise have, and price will not reflect the normal equating of supply and demand in a non-competitive market. Unfortunately, faith in free markets sometimes is not enough. That is why there have been consumers' movements. That is also why the merger laws and other antitrust laws exist. To ensure that consumers have freedom of choice, to ensure that consumers can bid for goods and services knowing that the market pricing mechanism is not artificially constrained. I believe that merger laws are fulfilling the promise.

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Endnotes

1. Director, Bureau of Competition, Federal Trade Commission, Washington, D.C. 20580.
2. The views expressed herein are those of the author and do not necessarily represent those of the Commission or any individual Commissioner. I am grateful for the considerable assistance my colleague Ernest Nagata provided in the preparation of these remarks.

Whither the Consumer Interest: The Role of Consumer Education and Research in an Era of Public Reinvention

The Esther Peterson Consumer Policy Forum, American Council on Consumer Interests Annual Meeting, March 28, 1996, Nashville, Tennessee

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It is a rare privilege to share my ideas with you--my mentors, my colleagues, and my hopes for the future of consumer research and education--today at this Forum which recognizes and honors the extraordinary contributions of Esther Peterson to consumer policymaking. It will be 20 years ago this summer that the full impact of Esther Peterson's influence on public policy in this nation came clear to me in one, high impact, visual image. As rambunctious delegates to the 1976 Democratic convention moved through the roll call of states casting their votes for candidates to be the party's torchbearer, the television cameras switched to the hotel where frontrunner, Jimmy Carter, calmly sat watching the fray. Flanking him on the couch were his two most trusted advisors, his wife, Rosalynn, and Esther Peterson. I gazed hard at the television screen. I was less than a year out of graduate school, enthusiastically gathering a cadre of undergraduate and graduate students to embark on what I was sure would be the seminal research program in family and consumer economics. The image of someone who I knew shared the same broad concerns as I, sitting next to someone I knew would soon be President of the United States (It's amazing how much one "knows" one year out of graduate school.), was affirming, exhilarating, and inspirational. From that day forth--and still today--with Mrs. Peterson as the model, I believe consumer issues can and should be at the forefront of national policy discussions and decisionmaking.

This morning as I discuss the role of consumer professionals in an era of regulatory reform and government downsizing, I intend to emphasize how we need to attend to our research and education agenda as public institutions and services reinvent themselves. Where are we today in consumer affairs? First, we are pragmatic. Take as an example the following: "QUALITY, PRICE, AND SERVICE," writ bold on a sign behind the counter, greets customers in the one shoe repair shop in Corvallis, Oregon. In much smaller letters, at the bottom of the sign, it reads, "Pick any two." The age of realism arrives in seller-buyer relations. How have we gotten to here from the age of idealism in which so many of us are grounded?

Only a bit more than three decades ago, our national leaders articulated a consumers' bill of rights predicated on the notion that armed with adequate information, and protected against fraud and abuse through government oversight and intervention, educated consumers could consistently make maximizing choices in the market, leading to improved individual welfare and reflecting market efficiency. Yet the notion of "pick any two" is fair warning to the consumer that no public intervention, no degree of consumer information or educational savvy can overcome the first law of consumer physics--"You can't have it all." Consumer decisionmaking is about balancing outcomes--making choices about the attributes of products and services we receive in the market. In fact, consumer decisionmaking is no different than public policy development.

On a broader level, we are in the throes of a fundamental, structural change in our economy and polity. Worldwide, public confidence and support are shifting away from the public to the private sector, and away from large to small institutions. Ironically, while we are seeing declining support in the public sector, we are experiencing rapid and growing concentration in the private sector--both in essential services, such as banking and in essential goods, such as food.

This shift in confidence away from the public sector is based on several things, including:

1) Demographic change. The central demographic change we often focus on is the aging of the population, leading to pressure on public budgets to support medical services and assistance. However, the maturing of the baby boomers--those born between 1945 and 1965--has been matched by the collateral

conservatism of 1980-1995. During that period, 12% of baby boomers shifted political allegiance from liberal to conservative causes/perspectives. Exacerbating this has been the suburbanization of the population, through which housing stratification has limited people's experiences and interactions.

2) Technological change is also moving us away from the public sector, shifting the locus of responsibility to individual decisionmakers. The technological changes most relevant to consumer affairs professionals relate to information access and management. I am pleased to see attention to the questions of information quality, sorting, and use being addressed at this meeting.

3) Internationalization of the economy has been driven by communications, transportation, and trade agreements. One corollary of internationalization is the end of the cold war and the need to develop a new basis for defining relationships among nations.

Whatever the underlying causes, the shift in confidence of the public sector has resulted in budgetary pressure at all levels of government and clear recognition of the need to establish new ways of doing business. In the Federal sector, budget pressure is measured in the 7 year budget accord of the President and Congress reached this winter. In the accord, discretionary spending (that is spending which is not legislatively mandated such as entitlements, some loan programs and a few--very few--priority programs) is set to decline almost 30% between now and 2002.

Budget pressure at the state level peaked in 1990, permanently influencing support for the public institutions where the vast majority of consumer research and education is conducted. Interestingly, government budget pressures at the local level were first severely manifested in the early 1980s, suggesting we should be watching local trends as a bellwether of national issues.

A second response of government to declining public support and growing skepticism regarding its role has been a tidal wave of regulatory reform, some in the form of streamlining, with most designed to reduce the role of government in private enterprise. Since 1994, the Federal code of regulations has shrunk--or been shrunken--by 37%. The goal of the Administration is to reduce Federal regulations by 50% by 1997, through reducing both the number and complexity of existing rules and significantly curtailing new rulemaking activity.

Again, regulatory reduction and reform have been the focus of efforts at the state and local level for almost a decade. Consumer protections--in the form of usury laws, cooling-off periods, disclosure requirements, and product grading and inspection--have decreased in almost half of the states since 1995. More striking, in a recent review of state consumer protection legislation since 1992, I found no states which had passed (or rescinded) major legislation which would result in substantial new consumer protections. The Tennessee Legislature, for example, failed to pass legislation this year which would reduce the more than 250% interest rates charged by title lenders in the state. Legislative or regulatory protection, as a means to assure consumer well-being, is anything but a growth component in the tool boxes of consumer affairs professionals.

The decline in the size and support for public sector programs is necessitating a much needed and highly valuable reassessment of how government--and universities and other public entities designed to serve the common good--operate. This is reflected in an emphasis on strategic planning, performance management, improved accountability, new partnerships and collaborations. In the case of my agency, which is the Federal partner spending almost $1 billion of taxpayers' money in support of a decentralized system of research, education, and extension in the agricultural, environmental, and human sciences, we are engaged in redefining the national interest vis-a-vis state and local concern in agriculture. We have set three broad goals for our programs which I believe will result in continuous improvement in food and agricultural science. We strive for 1) excellence, 2) relevance, and 3) usefulness, implemented through merit review, listening to stakeholders, and program evaluation and impact assessment.

What are the issues we need to address and the principles and actions which will guide consumer professionals through the churning waters of reform in public institutions? I believe we need to begin by clearly defining the business we are about. In 1974, the North Central Regional Research Coordinating Committee, NCR-52, still in business the last time I looked, set out to define and distinguish consumer economics, family economics, and consumption economics. That was one of the early systematic efforts to address the issue of specialization in our fields. I am pleased to see this issue on our agenda here. During the past decade, we have generated incredible expansion in financial planning and management professional education. We have witnessed, at long last, a recognition of household economic analysis, as a legitimate field of endeavor in economics. The work of many in this room was brought back into the mainstream of economics with award of a Nobel prize to Gary Becker. And we have watched or in a few cases participated in the struggle within home economics to rename the profession, resulting in adoption of nomenclature--family and consumer sciences--which in some cases supports and in others, frustrates, the efforts of consumer professionals. These are only a few of the tentacles we have in related areas. In a world where "everybody's business is nobody's business," we need to hold ourselves responsible for defining the consumer interest and assuring that we and our students are prepared to conduct research, mount educational programs, and assess policies that advance it.

Second, I believe we need to listen to our stakeholders, not just by putting our ear to the ground and waiting for the signal that the herd is stampeding, but by actively engaging in on-going conversation not only with leadership of consumer organizations, but also with people who have real problems or who see opportunities in different ways. This may require that we forge partnerships not only with those who share our agenda, but also with organizations, institutions, and individuals with whom we have limited points of tangency and perhaps substantial points of divergence. The proposal put forth by Scott Maynes and Steve Brobeck to establish an ACCI issues advisory board is an institutional step--but only a step--toward this end.

Finally, I believe that those of us who serve the consumer interest need to aggressively and specifically articulate the value of consumer research and education in helping government and other public institutions meet their responsibilities for assuring consumer welfare, protecting citizens, and developing and assessing public policy. Similarly, we need to demonstrate how improved knowledge can support the transition from government intervention and protection to a market-based consumer economy. This will require an enormous commitment of intellectual leadership, political savvy, and organizational effort. I believe we have much of the groundwork in place.

I would like to develop one possible scenario for achieving this from that which I know best, agricultural research and education. Congress has passed a new Farm Bill which includes in the Research, Extension, and Education title, a new section, 1419a, authorizing Policy Research Centers. Specifically, the Department may make grants, enter into cooperative agreements or contracts with policy research centers which conduct research and education programs that are objective, operationally independent, and external to the Federal Government and that concern the effect of public policies on--

1. farm and agricultural sectors
2. the environment
3. rural families, households, and economic
4. consumers, food, and nutrition

State agricultural experiment stations, land grant universities, and other universities and research institutions and organizations, private organizations, corporations, and individuals are eligible to compete for funds to support policy research centers.

This legislation is the essential step in providing a mechanism to solidify research, education, and policy expertise in the consumer interest. A consumer policy center could assess the return to investment in consumer economics research, address long standing issues such as the relationship of well-being to financial status and consumer policy. A center could address theoretical issues, such as the components of a consumer decisionmaking model. A center could establish and maintain data bases needed for impact analyses.

Federally-supported infrastructure for a consumer policy center, could be located at one institution, multiple institutions, operated through a consortia, as an arm of a professional group, or as a virtual center connected to many individuals and institutions electronically. Other models such as the National Bureau for Economic Research, a consortium of excellent economic theorists and analysts also is worth pursuing. The point is, if we believe consumer policy should be based on credible, consistent research, and if we believe consumer information, education, and the professionals who deliver these programs need to be informed by science driven analysis, we need to coalesce that belief in a strong focal point.

John Bryne, President Emeritus of Oregon State University, tells of a faculty member inspired by a call to action issued by the former evangelist who now presided over a university. At the end of the fall faculty meeting, hearing the inspirational administrator, one smitten professor rose and shouted out, "Take me, Lord, Take me--but in an advisory capacity." It's easy to advise action; I know how hard it can be to take the next definitive step and engage the effort.

The first question that arises in these times of downsizing and reduced funding levels is where do we find the financial resources? Let me again draw from what I know best--agricultural research and extension. I mentioned our need to articulate the value of consumer research and education in helping consumers transition from a regulated, protected marketplace to an information based, market-driven economy. An analogous problem is confronting production agriculture. Agricultural scientists used a highly effective strategy to seek a portion of public savings (in this case, mandatory dollars from the commodity credit corporation) to establish the Fund for Rural America -- a 3-year program to provide $300 million to support research, education, and rural development.

I expect to see neither substantial growth in the public sector, nor a return to a highly regulated, protected consumer market in my professional lifetime. I do hope to see a renewed clarity of purpose among consumer professionals leading to policy which will yield continuous improvement in consumer welfare. I encourage you to share my commitment to science-based public policy, particularly working toward excellent, relevant, and useful research and education to guide consumer policy. Perhaps one day this lecture will be jointly sponsored by the ACCI and the Esther Peterson Center for Public Policy Research.

Endnote

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Observations About the Role of Consumer Professionals During "The Worst of Times and the Best of Times"

E. Thomas Garman, Virginia Tech[1]

When examining the role of consumer professionals in an era of regulatory reform and downsizing, such discourse must occur in the context of an economic and business environment that continues to change. Illustrative of this point is Secretary of Labor Robert Reich's frequent observations about today's "anxious worker."

Today's Anxious Consumer Affairs Professional

In the context of the consumer movement, what also exists in today's workplace is the "anxious consumer professional." This term denotes consumer affairs specialists in business, consumer protection experts in government, and consumer economics professors and researchers in colleges and universities. It is my conclusion that in these times of economic uncertainty, consumer affairs professionals have to do the same thing that almost all of today's workers have been and must keep on doing—"Rethink and retrain ourselves, what we do, and how we do it!"

Consumer Protection in an Information-Based, Market-Driven Economic System

The consumer protections that the American society now enjoys are largely legislative and well institutionalized. These regulatory agencies, laws and regulations are purposive in that they have been created to achieve the goal of consumer protection, which occurs in most marketplace transactions as well as in business and government decision-making. As the same time, however, there remains a lingering degree of uncertainty for consumers.[2] In their collective psyche, consumers have grown into adulthood "knowing" they have legal and moral rights, but they are not sure about the specifics. Further, today's consumers are overwhelmed with choices in our market-driven economy.

We had an "information-based, market-driven economic system" one hundred years ago. In those days, the sellers were the kings in marketplace transactions who dictated the why, who, what, where, and when of consumption. As recently as 35 years ago, the dominant law of redress for consumer transactions was the Uniform Commercial Code (emphasis added). (Most states waited until the 1960s to pass consumer protection laws.) Thus, yesterday's consumers had precious little information available and they were further hampered by a lack of redress mechanisms. While we still live in an information-based, market-driven economic system, today's consumers are better informed.

Consumers Continue to Shop in Imperfectly Competitive Markets

Consumers always have had imperfectly competitive markets. The deviations, or market failures, include (1) a lack of competition, (2) negative externalities, (3) imperfect information, and (4) the overuse of public goods. These imperfections are precisely the arena of consumer protection efforts.

Government efforts to promote competition are an absolute necessity, since consumers are generally incapable of observing price fixing and collusion. Government also is expected to deal with negative externalities, such as pollution and resource preservation, because such an interest generally is not parallel with the profit motive.

The arena of imperfect information is clearly within the realm of consumer professionals, whose job it is to empower consumers with education and knowledge so that consumers themselves can discipline the capitalistic marketplace with their economic votes. (The competitive market wisely responds by providing more and better information, too.) Responsible economic voting also decreases uncertainty for consumers in marketplace transactions. Thus, market failures are challenged by the very essence of the consumer interest—seeking value for money as well as equity for all consumers.

Equity Concerns of Consumers

The societal concern with equity—the justice of any distribution of goods—is well within the common interests of consumers. Equity goals include (1) equalizing the distribution of political and economic power, (2) altering the distribution of income, and (3) reducing uncertainty. The United States has made enormous progress on these equity goals—especially since the 1930s—although slippage has occurred in income distribution since 1978. History reveals that the more informed and educated societies are less willing to accept inequities. Such change, of course, takes time. Life for consumers in the United States is so much better than 100 years ago, or even just 35 years ago. For ample details about American progress on equity goals, see James Carville's (1996) book, *We're Right, They're Wrong*.

Consumer Professionals Are Under Challenge

Yes, today's consumer professionals are under challenge, and in some quarters they are under threat. Here is an illustration. Over the past two years the radical-extremist conservative governor of Virginia gutted consumer protection by cutting the number of employees in the state office of consumer affairs from 35 to less than one dozen. Because of massive pressure from the reputable businesses community, politicians of all persuasions, and various consumer action organizations, the state legislature overrode the governor's efforts. Later this summer, the OCA's 800-number will be reconnected and its work force will rise to 19. This pro-consumer protection reaction to radical-extremist, anti-consumer politicians is becoming more typical.

The Need for Consumer Education Has Never Been Greater

Today's consumers can be described (to borrow a phrase) as "harried consumers." They are overwhelmed with choices, flooded with information (and much of it is very good and useful), forced to accept responsibility for buying and investment decisions, and living in a time when crass commercialism is becoming society's dominant value system.

Such times argue that there has never been a greater need for consumer education in the United States than today. Today's consumers do not comprehend their legal and moral rights. Consumers also have a weak understanding of sellers' everyday persuasive techniques. Knowledge of ripoffs and frauds is dismal, with one out of every six consumers annually being a victim of a serious deception. The list of problems and challenges facing consumers goes on and on.

The Future for Consumer Affairs Professionals is Bright

The fundamental responsibility to protect consumers in marketplace transactions has been and always will remain with consumers themselves. This implies, of course, that consumers be knowledgeable about their legal and moral rights in consumer transactions. Then and only then can consumers be empowered to provide some of the discipline necessary to keep the marketplace honest. Businesses will continue to help consumers by providing useful information and helpful redress systems because it is "good business" to do so. Government will not go out of business of consumer protection either because consumers, businesses, and politicians will not permit that to occur. The desire for the "level playing field" of an honest marketplace was long ago shown to be the common interest of sellers, consumers, and governments.

The preparation of consumer affairs professionals in colleges and universities—contrary to the predictions of some doomsayers—is a growth industry. Businesses want consumer affairs graduates. Businesses are hiring—and promoting—our graduates largely because consumer affairs majors understand the importance of protecting the interests of consumers in whatever work endeavors they follow.

These are not the worst of times for consumer affairs professionals, rather the current times are another evolutionary step in the consumer movement. The proverbial glass of water is neither half empty nor half full for consumer professionals—it is more than half full. Consumer professionals must seize the opportunity to, "Rethink and retrain ourselves, what we do, and how we do it!" Why? Because the best is yet to come.

Acknowledgements

I am indebted to Angela Cichocki for her excellent notetaking of the extemporaneous comments made during my oral presentation, reflected in this manuscript.

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Consumer Interests Annual *Volume 42, 1996*

Small Change: Problems and Prospects in Child Support

The role of child support payments as resources invested in children is explored. There was at best a small change in child support payments during the 1980s and 1990s, and inadequate child support amounted to no more than "small change". Both the problems collecting child support and the consequences for children's well-being are examined. I conclude with a policy agenda, actions that can be taken, and speculation about why progress has been so limited.

Andrea H. Beller, University of Illinois[1]

Introduction

The increase in the percentage of children living with only one parent is one of the most striking trends transforming the American family. The percentage increased from 12 in 1970 to 27 in 1993 (U.S. Bureau of the Census, 1994). Put another way, if present trends continue, six out of every ten children born today will spend part of their childhood in a single-parent family, usually headed by a mother (Norton & Glick, 1986).

Children who live in mother-only families suffer from low incomes and smaller inputs of parental time. Many of these children fall into poverty and are forced to rely on welfare. In 1992, more than half of all children in mother-only families lived in poverty compared with only 10%, in married-couple families [(U.S. Bureau of the Census, 1992; table 6). See Figure 1.] During any given year in the 1980s, more than 40% of all female-headed families with children under 18 years old participated in the Aid to Families with Dependent Children (AFDC) program (Moffitt, 1992). The absence of one parent from the household almost inevitably reduces time available for investments in children.

Lower resources invested in children should raise our concern about the future generation. For the direct link between early investments in children's human capital and their socioeconomic attainments as adults, such as their education, employment and wages, has been well established in the literature (for a review, see Haveman & Wolfe, 1995). Less investment in children means poorer outcomes for them as adults.

Importance of Child Support

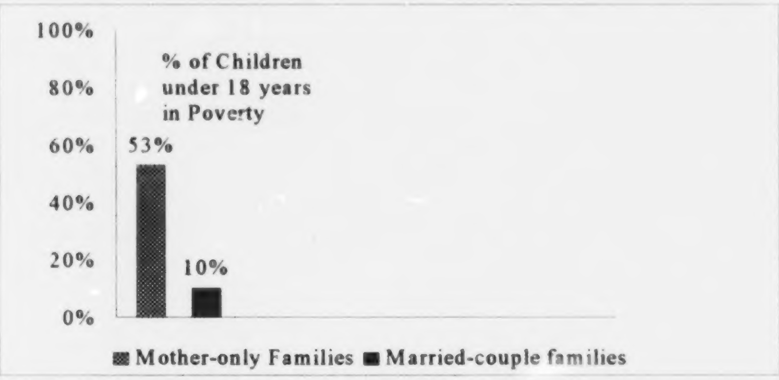
One factor contributing to the economic plight of many of these families is that too often the children's fathers provide little or no financial assistance and see their children infrequently, if at all. Not surprisingly, the public has come to view child support--that is, regular, legally-mandated payments from a noncustodial parent to a custodial parent--as one of the keys to improving the economic well-being of mothers and their children (Beller & Graham, 1993).

Government efforts to insure that able-bodied noncustodial parents fulfill their financial obligations to their children intensified along with the growth in single-parent families and the associated increases in public expenditures on welfare. Federal efforts officially began in 1975 and by the end of the 1980s, child support enforcement had become the first line of defense in the government's long-running war on poverty and welfare dependency. Title I of the Family Support Act of 1988 placed primary responsibility for the support of children squarely on the shoulders of their parents (Beller & Graham, 1993).

Contribution of Child support

Receiving child support can benefit a child in many ways. Immediate and direct benefits may include lifting the child and his mother out of poverty, allowing them to escape welfare. The payment of child support can enable the single mother to find high-quality child, care so that she can work. The incomes of women who receive child support are higher than of women who do not, and the difference exceeds the amount of child support received. This is due in part to the fact that women who receive child support are more likely to work, work longer hours, and earn more income than women who do not receive child support (Graham &Beller, 1989). This occurs, in part, because child support reduces the likelihood of welfare participation, which in turn, tends to increase work effort even more. In addition, child support income *per se* appears to deter work effort less than equivalent amounts of other

Figure 1
Poverty of Children by Living Arrangement, 1992



Source: U.S. Bureau of the Census (1992).

nonwage income (Beller & Graham, 1993). There is also some evidence that the payment of child support is associated with increased contact between the noncustodial father and the child (Wallerstein & Huntington, 1983; Lerman, 1986). Long-run benefits for children include greater socioeconomic attainments later in life, with particular emphasis of many studies placed on educational attainment as the outcome (Beller & Chung, 1988; Beller & Graham, 1993).

Discussion of Theme

Small Change

The theme of this talk and of our book, *Small Change*, means that there was at best a small change in child support payments during the 1980s, and as best as I can tell during the 1990s as well, and that for too many mothers and children inadequate child support payments amounted to no more than "small change" (Beller & Graham, 1993; p. xxi).

Problems with Child Support

It wasn't that long ago--it was in 1980 when the Census Bureau released findings from its first national survey of child support and alimony--that the full extent of the problems with child support had become widely known (U.S. Bureau of the Census, 1980). That survey revealed that only 59% of the roughly 7 million mothers with children under 21 whose father was living elsewhere in 1979 had a child support award. Among the roughly 3.5 million mothers with an award and due payment in 1978, one quarter received no payment at all, and another quarter received less than the full amount due. Among the 2.5 million mothers who received some support in 1978, the average annual payment was just over $3300 in 1989 dollars, to help support an average of nearly two children (U.S. Bureau of the Census, 1991). The survey also found that on each of the aforementioned child support outcomes, black women and never-married mothers--groups that form a high proportion of both the poor and welfare populations--fared much worse than average (Beller & Graham, 1993).

Prospects for Child Support

We did more in our book than just uncover the many problems with child support; our data analyses also revealed some cause for optimism. We showed that the relative constancy of aggregate child support statistics over a decade and a half concealed some important underlying changes. First, our detailed analysis of aggregate statistics revealed notable gains for both black mothers and never-married mothers, relatively small groups in the population eligible for child support. Second, our statistical analyses revealed that opposing forces were responsible for the apparent lack of change in award and receipt rates shown in the aggregate statistics (Beller & Graham, 1993). Because receipt rates did not fall, and in fact increased for some subgroups of the population, we were able to infer that changes in public laws and private attitudes had had a positive impact. We also documented that without the improved legal and social environment, the real value of child support awards would have declined even more than they did due to adverse socioeconomic changes in the composition of the population eligible for support, to the stagnation of male incomes after 1973, and to the impact of inflation on both existing awards and newly-made ones (Beller & Graham, 1993).

We also devoted attention to how child support laws have been related to both the progress and the persistent problems we identified. Historically, state laws varied considerably, but the 1984 Child Support Enforcement Amendments mandated a uniform set of laws for all states, and the 1988 Family Support Act further tightened some of these requirements. Until recently, most new child support legislation addressed problems with the enforcement of existing awards rather than the creation of new ones. The relative absence of guidelines and the weakness of paternity legislation were probably responsible to some extent for the problems of the low and declining value of awards and the lack of awards among the never-married (Beller & Graham, 1993). As more information has become available, lawmakers have continued to revise and attempted to strengthen these laws.

Problems with Child Support

Now, I will discuss some of the ongoing problems in child support. I will consider in turn the lack of award and payment, the inadequacy of awards, interstate enforcement, never-married mothers and paternity establishment, and noncustodial fathers. I will begin with information assembled for our book and update the issue where further information is available. Some degree of comparability over time has been lost because in 1992, the Census Bureau changed some of its questions in the April Current Population Survey (U.S. Bureau of the Census, 1995).

Lack of Award and Payment

An examination of child support outcomes across the repeated Census surveys of the population eligible for child support shows how little things had changed by 1990.[2] As of April 1990, 58% of the roughly 10 million mothers with children from absent fathers had a child support award, down from 61% in 1986, and 59% in 1979. During 1989, 75% of all mothers due support actually received some payment, up from less than 72% in 1978. Among those receiving support, the average amount of child support received fell 25% between 1978 and 1985, adjusted for inflation. After that, receipts rose, but even by 1989 the real value of child support received was 12.5% less than in 1978.[3]

Inadequacy of Awards

Even if child support awards had kept pace with inflation, would they be adequate? We offered three vantage points from which to evaluate the adequacy of existing awards. First, we showed that child support awards are low and have been declining relative to father's ability to pay as measured by average male incomes. New awards as a percentage of men's incomes declined from 16% in 1970 to 12% in 1984. By almost any standard, these declining percentages would have to be considered alarmingly low for an average of roughly 1.7 children. Both Massachusetts and Wisconsin base their guideline percentages on the noncustodial parents' gross income: Massachusetts recommends 25 to 30% for one to two children and Wisconsin requires 17% for one child and 25% for two children (Garfinkel & McLanahan, 1986). Thus, it would appear that, since at least 1970, new awards as a proportion of male incomes have fallen well below these mandated guidelines.

Second, we showed average awards are too low to meet children's needs as determined by actual expenditures on children from studies on costs of raising children and even by the minimal living standards incorporated into the official poverty line. And finally, we showed that at current levels, awards have little potential for reducing poverty and welfare dependency among women and children.

The Family Support Act of 1988 has several provisions designed to attack two sources of the problem of the inadequacy of awards. First, it makes the use of guidelines by the states mandatory; although the guidelines vary widely, awards are specified as a percentage of the noncustodial parent's income. Second, it provides, beginning in 1993, for the review and adjustment of awards established under the state child support enforcement program every three years (Beller & Graham, 1993).

Interstate Enforcement

A major problem has existed with interstate enforcement. Since child support enforcement functions as a state-by-state system, a noncustodial parent used to be able to flee across state lines to avoid paying child support. Some states were lax about enforcing orders from other states. About two out of ten noncustodial parents live in different states from their children (U.S. Bureau of the Census, 1995; Table C). Now, if the noncustodial parent can be located, he can face criminal penalties for fleeing across state lines to avoid paying child support. Research we carried out for our book showing that criminal penalties for nonsupport were effective state laws served as invited testimony at hearings held on Capitol Hill in January 1992. The

Child Support Recovery Act of 1992 was passed into law in October of 1992.

Never-married Mothers and Paternity Establishment

While the divorce rate has leveled off, the out-of-wedlock birth rate continues to rise. Thus, paternity establishment is becoming more and more of an issue. As of April 1992, never-married mothers comprised 26% of all custodial mothers (U.S. Bureau of the Census, 1995; Table A), up from around 20% during the early eighties (Beller & Graham, 1993; Fig. 2.2). The Family Support Act of 1988 required states to meet Federal standards for establishing a minimum percentage of paternities, with the ultimate goal of reaching 50%. It also required states to obtain the Social Security numbers of both parents when issuing a birth certificate. In 1992, 27% of never-married mothers had a child support award (U.S. Bureau of the Census, 1995; Table 1), up from only around 16% during the early 1980s (Beller & Graham, 1993; Table 2.1). Assuming that paternity establishment preceded the award, these figures suggest that this law resulted in some progress, but that we still have a ways to go. A recent paper concludes that "...paternity establishment is important for child support success and can be altered by policy" (Freeman & Waldfogel, 1995; p. 19).

Noncustodial Fathers

The issue of noncustodial fathers' role in the support of their children appears to underlie many of the aforementioned problems. In terms of economics, it has been established that noncustodial fathers can afford to pay much more than they are paying now (Sorenson, 1995). Then why are there so many seemingly intractable problems? Economic theory forms the basis of one argument that fathers who live apart from their children cannot observe their children's consumption, thus reducing the amount of money they will be willing to transfer to their children (Weiss & Willis, 1985).

Consequences of Child Support

While our book delineated in great detail the **problems** with child support, it defined a *new* area of study on its **consequences**. The evidence we presented firmly documented the value of higher payments by showing how they improve the economic well-being of children. We examined to what extent child support payments augment the income of single mothers and their children. We also considered the effect of child support on dimensions of family behavior including a mother's decisions regarding employment and whether or not to marry or remarry, and a child's decisions about his or her own schooling. In turn, these decisions affect not only current but also future well-being. Thus, child support payments have important implications for both the current and the future generation.

In September 1995, a conference on the consequences of child support enforcement for nonresident fathers was held at Princeton University, for which a number of papers had been commissioned. Among the consequences covered were their labor supply, marriage and fertility, nonmarital fertility, and parental contact and conflict.

What I want to focus on now is the consequences of child support for children's educational decisions. This is an area that I have pursued entirely with graduate students working on their Ph.D. dissertations, and I am looking for the next graduate student who would like to work in this vibrant research area.

Children's Educational Attainment

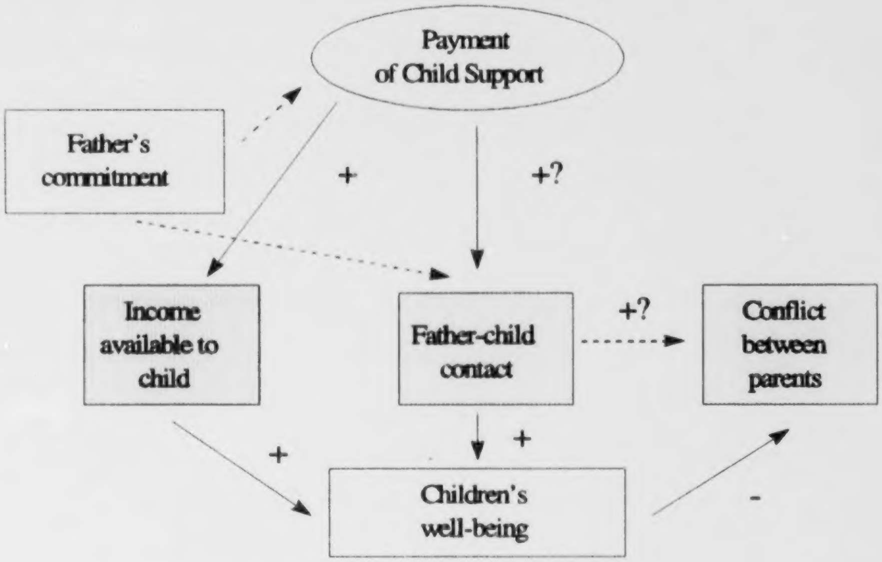
Most of the research on the consequences of family structure for children focuses on their educational attainment. One of the pathbreaking studies in this area was carried out by Sheila Fitzgerald Krein who found that young adults who ever lived in a single-parent family attain less education than those who have always lived in an intact two-parent family (Krein & Beller, 1988). The findings also suggested that the resource differential extends beyond money because the lower income of the single-parent family does not explain the entire educational differential (e.g., Krein & Beller, 1988; McLanahan, 1985). Interestingly, not all sources of income have an equal positive effect on educational attainment; Seung Sin Lee Chung was the first to show that child support income had a larger effect on education than other income (Beller & Chung, 1988).

Recently, Pedro Hernandez has shown that part or all of the stronger positive effect of child support than of other income on children's education may represent nonmonetary aspects of the father-child relationship, such as interest in the children's development, parental values or childrearing practices, or the presence of a male role model in the child's life (Graham, Beller & Hernandez, 1994; Knox & Bane, 1994; Hernandez, Beller & Graham, 1995). These unobservables affect both child support payment and children's educational attainment.

Is it child support income per se or something about the men who pay child support? Hernandez formulates a model designed to provide indirect evidence on the impact on educational attainment of characteristics of non-custodial fathers (Hernandez,

Figure 2

Relationship Between Child Support and Children's Well-Being



Beller & Graham, 1995; Hernandez, Beller & Graham, 1996). Arguing that the strengthening of the child support enforcement system during the 1980s would have brought more reluctant payers into the system, he predicted a decline in the beneficial effect of child support. If the stronger positive effect of child support than of other income was associated with positive characteristics of fathers who paid *voluntarily*, then the extent to which the effect was stronger should have diminished over time. Using the CPS data, he examined changes between 1979 and 1988 or between 1984 and 1988 in the effect of child support on three measures of children's educational attainment and found evidence consistent with this hypothesis.

Problem of selection. This hypothesis is based on the concept of selection. It states that fathers who pay support voluntarily are different in unobservable ways from those who don't. The research described above assumes that the payment of child support *per se* does not cause fathers to become more involved with their children.

What do we know about these relations and what do we still want to know? This work raises a series of questions of importance to public policy. (See Figure 2.) First, does the payment of child support itself cause nonresident fathers to become more involved with their children? Second, can public policy intervention cause fathers who become payers through the child support enforcement system to become more involved with their children? And finally, would this increased involvement benefit children? Fathers who pay, but only reluctantly, may compensate by decreasing their involvement with their children in other ways, or their reluctance may lead to increased conflict with the child's mother, which would reduce the child's well-being (Seltzer, 1991; Seltzer, Hanson, & McLanahan, 1995). Yet other fathers who pay child support reluctantly may simply lack the necessary skills to become involved with their children, and for this group, programs that accompany child support enforcement with the "development of parenting and other life skills," as recommended by Hernandez, Beller and Graham (1995; p. 259), might be effective. But, it may be that father's commitment increases both child support payment and father-child contact, making it look like payment is increasing contact. This is the same problem of unobservables that plagues our research on the effect of child support on children's educational attainment.

Prospects for Child Support in the 1990s

For the benefit of the next generation, it is crucial that we find ways to get absent fathers to provide adequate support for their children. The intractability of the problem suggests that this is to some extent a question of family values. Are men becoming more or less committed to their children and what are the societal influences that are shaping this?

Policy Agenda for the 1990s

We concluded our book with a policy agenda for the 1990s. I will share with you some of the highlights.

Continue to work on the development and full implementation of mandatory guidelines for child support awards. (1) Guidelines should incorporate percentages of income that are based upon the latest reasonable estimates of the costs of raising children, which at that time were 18% of gross income for one child, 27% for two children, 32% for three children and 36% for four children. (2) Implement a uniform national system of guidelines in place of the present state-by-state system. Developing a uniform national system would mean that only one set of guidelines would be needed rather than 50. The time and money saved could then be used to update child cost estimates on a regular basis. A national system of guidelines might even help reduce the problems with interstate enforcement.

Continue vigorous enforcement of effective child support techniques. (1) Add criminal penalties for nonsupport to the federally-mandated arsenal of enforcement weapons. As I indicated earlier, this step has already been taken. (2) Encourage innovative approaches to child support enforcement, especially for the self-employed and chronically unemployed. For example, the Illinois House approved on March 27, 1996 a bill to place a list of deadbeat dads on the internet and to deny marriage licenses to individuals who owe back child support.

Develop and implement policies that facilitate greater investments in the education of children in single-parent families. (1) Extend child support beyond age 18 for students enrolled full-time in high school, and extend child support to age 22 for students enrolled full-time in any postsecondary education. In addition, either require the noncustodial parent to pay a proportionate share of expenses up to the tuition and fees at the major state university in the state or establish a trust fund as part of child support agreements to provide savings for children who are expected to enroll full-time in postsecondary education. (2) Develop policies that encourage increased contact with the noncustodial parent but take into account the possibility of the negative impacts through increased conflict between the parents.

Actions that can be taken by Family and Consumer Economists

There are some actions that family and consumer economists can take. **Family economists** can continue to contribute to the development of the cost of raising children estimates as Mark Lino has done. In addition, they can work to get reasonable guidelines passed in their states and provide their expertise when their state guidelines come up for revision as mandated by law. **Financial counselors** can work on getting single mothers and noncustodial fathers to understand the value of establishing college trust funds and continuing child support beyond age 18 for full-time students. **Consumer educators** can teach teenagers that having a child is at least an eighteen year commitment for, at a minimum, financial support and ideally, other support as well. **Graduate students** and other young scholars should consider contributing to the growing body of research on the consequences of changes in family structure, child support payment, and contact with noncustodial fathers for children's well-being.

Summary and Conclusion

Despite all the efforts, child support isn't paid now any more frequently than it was a decade and a half ago. We need to continue to work on the goal of getting children fully supported, so that they can attain their full potential as adults. The missing key to future progress and the one that has allowed inadequate provision of support to go unchecked for too many years, is lack of a national commitment to the economic well-being of children, our primary national resource. Until and unless a national consensus is reached which puts our children's well-being first, we may find that new laws and regulations cannot bring about improvements in the award and payment of child support of the magnitude that are so desperately needed (Beller & Graham, 1993).

Acknowledgements

I am grateful for the excellent and persistent research assistance of D. Elizabeth Kiss in preparation of this talk.

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Endnotes

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2. The second Census survey on child support was conducted in April 1982, and subsequently, they have been conducted every two years. All of the statistics in this paragraph were obtained from U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 112, and Series P-23, No. 173.
3. This rise may need to be viewed with caution due to some possible change in the way the Census Bureau measured the amount of child support received that may break comparability with earlier data (Meyer, 1992).

The Informed Consumer: The Believability of Non-Test Consumer Ratings

This paper was part of a general session, "Behind the Ratings: a Review of Consumer Product Testing", organized by E.Scott Maynes as means to establish a stronger scientific foundation for consumer product testing and rating. It also serves to introduce ACCI members to consumer product testing and rating as carried out in Europe and better appreciate the foundations on which U.S. product testing is conducted by Consumers Union.

Erik de Gier, Ph.D., Consumentenbond, Netherlands[1]

Introduction

Consumentenbond is the Dutch Consumers Union. Its leading publication, Consumentengids, or Consumer Guide, has 660,000 subscribers, or about one in ten households. This 10 percent penetration is about double that of the other leading Consumers Unions. Consumentenbond is a members organization, whose members automatically receive Consumentengids. In addition, members can subscribe to two other magazines dealing with Personal Finance and Travel respectively. Consumentenbond also does complaint resolution and offers free legal services to its members. The organization relies on revenues of $46 million (1 guilder = $0.5279) and a staff of 270 to carry on its activities. Besides its periodicals, Consumentenbond is a major publisher of books and compact discs. The consumer issues that concern Consumentenbond most these days are health care and personal finance.

The Research Division of Consumentenbond numbers 70 and includes engineers, social scientists, economists and lawyers. The activities of the Research Division cover the entire range of research--comparative product testing, health and nutrition research, environmental research, as well as research on services. Unlike Consumers Union, USA, Consumentenbond does not have its own test labs. Instead, it "farms out" its testing to independent laboratories.

Consumentenbond is a major collaborator with other consumer organizations. It is one of the chief partners in International Testing, the group that subjects products marketed in different European countries to identical tests. It is also an active participant in BEUC, the pan-European organization that seeks to influence policy in the European market.

Within its own country Consumentenbond is one of the most influential Consumers Unions in the world. It is one of the few CU's that negotiate on equal terms with industry and government. The Director of Consumentenbond has regular contacts with Cabinet officers in the Netherlands Government.

My discussion focuses on four topics:

- the methods employed in the evaluation of services;
- the impact and significance of research on "consumer satisfaction";
- new developments in research on services;
- the believability of ratings of services.

In dealing with these topics, I will pay some attention to the European dimension. At the end of my paper I will seek to make the case for research on consumer satisfaction as a new and powerful tool for consumer organizations.

The Evaluation of Services: Our Tool Kit

At Consumentenbond research on services covers the following topics:

- financial services;
- telecommunication and other information services;
- public utilities and transportation;
- health services;
- private (commercial) services;
- price surveys.

In collecting information on services, we employ a variety of methods, each tailored to the problem at hand. Our methods include desk research, "ghost shopping", sample surveys, panel studies, and complaint analysis. I will describe these methods very briefly and give some examples.

Desk Research

Desk research consists of the selective scrutiny and culling of all relevant publications, whether print or computer, from public or private sources. The advantages of desk research are its ease of collection and low cost. Since published information is not usually current, desk research typically signals the beginning of a more extensive search for information, to be followed up by ghost shopping, survey research, or some other approach. A great virtue of desk research is its ability to produce compact, readily understood tables, e. g., tables comparing the interest rates and terms offered by different banks on mortgage loans.

A majority of the articles in the 1994 and 1995 issues of Consumentenbond's Personal Finance magazine are based exclusively on desk research. The tables speak for themselves and the quality of the information is excellent. There is no need to recommend "Best Buys"; the winners are obvious.

Ghost Shopping

" Ghost Shopping,", or Mystery Shopping, seeks to simulate the experiences of ordinary consumers in purchasing some service or item. In Ghost Shopping an experimental person (s) presents himself as a customer or potential buyer of services. What Ghost Shopping records, ever so vividly, are the gambits and sometimes exaggerated claims which salespersons employ to make the sale. Sometimes Ghost Shopping reveals the unwillingness or inability of sellers to provide the purchaser with relevant information. And sometimes, Ghost Shopping identifies salespersons who are helpful, honest, and knowledgeable, i. e., performing the role that consumers properly expect of them. Ghost Shopping may involve actual store visits or sometimes, just telephone contacts.

Methodologically, Ghost Shopping constitutes an exercise in investigative journalism. It is intended to dramatize consumer problems. And it serves the magazines by arousing reader interest. Ghost shopping can also be viewed, like focus groups, as a first step in coming to understand what consumer problems exist and what accounts for them.

Consumentengids and the other two magazines regularly feature the results of Ghost Shopping. These attract readers' attention and warn them of the sometimes false "pitches" they will encounter when shopping. In 1994 and 1995 Ghost Shopping was used to explore the extent of illegal price fixing by different kinds of sellers, for example, real estate agents, window cleaning firms, pharmacists and drug stores.

Cross-Sectional and Longitudinal Sample Surveys

Consumentenbond relies heavily on sample surveys with sample sizes and the representativeness of the sample varying with the purpose of the survey.

Phone Call "Actions" represent a combination of research and "campaigning." In these annual "Actions" interviewers telephone representative samples of members and non-members and seek information on a major theme. Actions in the last five years have dealt with:

- 1989. Problems in buying and using pharmaceutical products;
- 1990. Consumer complaints about environmental problems, e.g., chemical waste, noise, traffic, transportation.
- 1994. Problems with public services--telephone, transportation (air, rail, bus), post office, bureaucracies, etc.
- 1994. Consumer problems in dealing with insurance companies.
- 1995. Problems consumers encounter dealing with banks.

The objectives of these Action Surveys are three: (1) to put together an inventory of complaints and problems; (2) to provide "stories" that will command attention and help focus public concerns on the issue of the year; (3) to use the findings as "ammunition" in seeking changes in policies and practices. These Action Surveys were conducted over a week and resulted in 3,000-5,000 complaints each. The table below shows the distribution of complaints on banking services that were obtained from the 1995 Action Survey.

A second type of sample survey invites members or special groups to participate in Focus Groups or controlled use tests (e. g., shavers) or to report on their experience with some service.

"Real" Surveys are those that meet the common methodological standards of social research. This means that particular attention is paid to sample design so that the resultant sample can be claimed to be a probability sample, entirely representative of the parent population. Consumentenbond rarely uses Real

Surveys: ordinarily they are too expensive. Consumentenbond's goals can be achieved by using less expensive surveys of members, surveys that cannot claim to be representative.

Table 1
Relative Frequency of Consumer Problems, 1995 Action Survey (n = 3,252)

	%
Within country check clearing	41.7
Borrowing	19. 8
Service	11.5
Savings	7.4
International payments	7.3
Investments	5.0
Combinations of services	2.4
Others	4.9

One Real Survey dealt with consumer behavior and problems with respect to payments and covered such instruments as ATM machines, credit cards, and checks. Another Real Survey dealt with the Chronically Ill. This was a Panel Study that was carried out in collaboration with a health research institute and a consumer research institute. The focus of this study was on alternative ways of achieving recovery. Respondents were asked to fill in booklets, recording their encounters and experiences with different health professionals--general practitioners, dentists, etc. Yet another type of Real Survey is Consumentenbond's continuing Readership Panel in which respondents are asked to evaluate particular articles in Consumentenbond's periodicals.

Consumentenbond also maintains an ongoing panel of 7,000 members who are car owners. This panel is mined for three-times-a-year articles on car satisfaction, costs of ownership and driving costs, frequency-of-repair, accident claims, and a comparison of the costs of buying new vs. used cars.

Usability Research

From time to time Consumentenbond carries out research on the "usability" of certain products, denoting the ease and effectiveness with which each product can be used. Survey respondents and/or expert panels are asked to render positive and negative judgments on various aspects of usability. Usability research covers both user manuals and the operation of the product. In 1995 usability projects dealt with color televisions and the use of microwave ovens by the elderly and in 1996 with VCRs.

Consumer Complaints

In the realm of consumer complaints, Consumentenbond culls extremely useful information from the files of its Customer Complaint Division. As mentioned earlier, Consumentenbond operates the country's primary consumer complaint resolution service. Consumentenbond's complaint department serves only members. Typically the Legal Service Division of Consumentenbond receives more than 15,000 written complaints. Since 1993 this department has stored information on most of these complaints in an electronic database called the Uniform Complaints Register, or UKR. Recorded in UKR are the product involved, the nature of the complaint, and the resolution of the complaint. Thus, UKR provides a comprehensive, up-to-date, and detailed picture of consumer complaints as well as showing how the frequency of complaints changes over time. Table 2, based on UKR data, shows the distribution of complaints by type of product or service.

Table 2
The Netherlands: Complaints by Product/Service, 1994
(Source: UKR, SWOKA, 1995)

Number of Complaints

Purchase of consumer durables*	1,874
Repairs and traditional services	840
Financial services	2,061
Liberal professions	203
Health sector	274
Semi-collective services	1,222

*includes cars, furnishings, and household/kitchen appliances

In resolving consumer complaints, The Netherlands also utilizes Arbitration Committees. These are voluntary committees established across the country with the support of Consumentenbond, retailers, and manufacturers. They handle about 4,000 complaints a year. This information, too, is used by Consumentenbond for consumer education.

New Developments in Services Research

Over the last decade Consumentenbond has been trying to develop permanent, updated electronic data bases for Health Insurance and for Automobile Insurance that would provide our members with Tailored

Advice, that is, advice that fits the needs of the particular individual or household. Both health insurance and auto insurance are characterized by numerous suppliers, many different policies, and myriad terms.

This is exactly the situation for which modern computers are suited. Consumentenbond's future delivery of Tailored Advice via computer online services on the Internet is facilitated by the fact that 65 percent of members have personal computers in their homes.

The goal of Tailored Advice is to improve market transparency for these two services and thus make it more likely that members of Consumentenbond obtain just what they need at a reasonable price. As time passes, Consumentenbond expects to enlarge the set of services for which Tailored Advice is available, starting with pensions and term insurance.

Another new development is the combination of product testing with services research. An article in Consumentengids will include the results of ghost shopping, laboratory tests, usability research, and frequency of repairs surveys, all pertaining to, e.g., microwave ovens. In the future we will be doing more of this. This approach will provide our readers with appraisals of all aspects of the product or service in which they are interested. Table 3 depicts Consumentenbond's' current reliance on various approaches to information collection published in the main magazine and the money guide.

Table 3
Data Collection Methods Used by Consumentenbond, 1994 and 1995

Method	1994	1995
Laboratory product tests	60	60
Desk research	66	70
Ghost shopping	5	8
Sample surveys and panel studies	17	11
Usability research	2	1
Total projects	150	150

European Services Research

During the 1980s the European Consumers Unions became aware of the possible advantages of joint testing of consumer products. This resulted in the formation of the European Testing Group, whose name was later changed to International Testing, or IT.

It was almost inevitable that joint testing of products would be followed by joint evaluation of services. The need for such an activity became more urgent in 1992 when the European Commission introduced the "internal market," an arrangement permitting a free flow of services across national borders within the European Common Market. Thus, a single firm might offer the same banking services in all the Common Market countries.

Where might the Consumers Unions obtain funds to finance the evaluation of cross-national services? In IT's view, the most likely source was the European Commission, located in Brussels. Recently IT submitted research proposals dealing with credit cards, mortgage rates, and term insurance.

In April, 1996 Consumentenbond and Stiftung Warentest (Germany), with funding from the European Commission, will sponsor a European Workshop on Services Research. The goal of the Workshop will be to put together a research agenda that may be implemented in subsequent years. We expect the resulting research to provide input for our magazines and also ammunition for the campaigning activities of member Consumers Unions.

The Believability of Our Service Evaluations

The services research we do may be viewed as a hierarchy. Statistical reliability and validity, and hence, "believability," will tend to be low at the bottom of the hierarchy and high at the top. Information obtained from Ghost Shopping and our Consumer Complaints "Actions" will probably be low in the hierarchy while the information from our "Real" Sample Surveys is likely to be at the top .

To be specific, we can be confident that our Ghost Shopping reports are *valid*, i. e., represent accurately what they purport to measure. However, a single or small number of Ghost Shopping episodes will be not be *statistically reliable*, revealing how often a type of behavior occurs.

By the same token, reported complaints from our Consumer Complaints "Actions" may be not be perfectly valid or perfectly reliable. Why? Because with respect to validity, we have no way of confirming the accuracy of the events reported (though we assume our members try to convey their experience accurately). As for reliability, we do not know the extent to which different individuals take the trouble to report different types of complaints. But we will assume, reasonably, that different types of complaints are reported at the same rate.

By contrast, our "Real " Survey on Payments utilized standard social science methods with respect to questionnaire design and execution and survey design and execution. It should meet high standards with respect to reliability and validity.

Services research in a consumers union like Consumentenbond must match the highly practical needs of an organization that turns out one monthly magazine and two quarterly magazines. This means that, usually, services research must be done quickly, with minimal cost, and with an eye to headlines. This implies that Consumentenbond is seldom able to engage in fullscale sample surveys with well specified probability samples and high response rates.

Nonetheless, the research must be executed in a careful, defensible way. Otherwise, Consumentenbond will be vulnerable to lawsuits. We believe that, in general, we have produced research that is at once attention-raising, helpful, and defensible.

Nevertheless, an important question remains: whether Consumentenbond's menu of research methods will require modification in the near future. There are at least two reasons to believe so. First, the increased societal and political significance of Consumentenbond after several decades of growth makes well developed, defensible research methods a *sine qua non*. Second, the increased complexity of consumer products and services also demands a variety of research approaches. How much change will be required is not yet clear.

Probably we will continue to employ a hierarchy of research methods. But it is likely that two changes will be necessary. First, we will rely ever more on electronic data bases such as our consumer complaints data base and the proposal for tailored information. On the other hand, we will rely more on survey-based reports on usability and consumer problem. Comparative product test information will not suffice any longer.

A Need for "Consumer Satisfaction" Surveys?

Tomorrow's consumers will be different from today's consumers and yesterday's consumers. Three factors support this assertion: (1) demographic changes, e. g., aging of the population, (2) the globalization of consumption, and the apparently unending proliferation of new technologies, affecting products and information delivery alike.

At the same time consumers are becoming increasingly segmented. The French marketer, G. Mermet, identified the following market segments based on the reported goals of the consumers responding to his national survey: Those whose consumption activities are dominated by (1) economic wellbeing ("pour être mieux dans sa peau"), (2) the quest for health ("passione pour sa santé), (3) the quest for comfort and safety ("on veut du confort et de la sécurité), (4) his image as an informed and assertive consumer ("on veut être consulté informé et consommer actif") (5) his role as an activist consumer ("on exige le droit à l' infidélité zappeuse,") and (6) his desire for novelty and cosmopolitan tastes ("par éclectisme et par curiosité"). (Mermet. 1995)

All across the western world preferences are fragmenting and consumers are dividing themselves into distinct market segments. Producers of goods and services try to adapt to this by catering to the needs of different segments of consumers. Consumer oriented thinking is replacing production-oriented thinking.

As Philip Kotler points out, a consumer-orientation requires a company to assume the customer point of view (Kotler, 1994). It follows that producers should devote more resources and more attention to customer satisfaction research. The reason: satisfying consumers is the chief avenue to profits.

Kotler defines *consumer satisfaction* as "the level of the person's felt state resulting from comparing a product's perceived performance (or outcome) in relation to the person s expectation". (Kotler, 1994, 40). Kotler asserts that buyers will buy from the firm with the highest customer delivered value. *Customer delivered value* then is the difference between total customer value and total customer cost. Further, "Total customer value is the bundle of benefits customers expect from a given product or service" (Kotler, 1994, 37).

Customer delivered value consists of a number of factors that might be pertinent to future research undertaken by consumer organizations on behalf of consumers. These are product value, service value, personnel value, image value, monetary price, time cost, energy cost, and psychic cost.

I tentatively conclude that the future research of consumer organizations might profitably make use of supply side and marketing research insights. "Customer Satisfaction" or, better "Consumer Satisfaction" could become the corner stone not only of research strategies and methods, but also of consumer product testing unions. In my view this approach would increase the believability of research-based ratings. I might note, in ending, that members of Consumentenbond often seem less satisfied with their purchases than non-members. (Box, 1979)

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Note: In writing this paper I used various Dutch language reports of Consumentenbond. I also reviewed two volumes (1994 & 1995) of the Consumentengids (main magazine) and the Consumentengeldgids (money guide)

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Endnotes

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Behind the Ratings: The Reasons to Believe A Review of Consumer Product Testing

This paper was part of a general session, "Behind the Ratings: a Review of Consumer Product Testing", organized by E.Scott Maynes as part of a discussion to establish a stronger scientific foundation for consumer product testing and rating. It also serves to introduce ACCI members to consumer product testing and rating as carried out in Germany and better appreciate the foundations on which U.S. product testing is conducted by Consumers Union.

Peter Sieber, Stiftung Warentest, Germany[1]

Why should a consumer have more confidence in product test results from a *Consumer magazine*, as compared with those from a *commercial publication*? Are there reasons for "believing" more in the quality ratings by consumer product testing organizations rather than other "tests"?

I will try to "make the case" for consumer product testing by explaining the methodology used at Stiftung Warentest, the Testing Institute in Germany , or SW. I will also deal with the sometimes different testing methodology used by large consumer product testing organizations in other European countries.

Let me start by acquainting you with key statistics that describe the four most important product testing organizations in Europe. First, alphabetically, comes Consumers' Association, or CA, in the United Kingdom. Founded in 1957, its staff currently numbers 470. CA's banner publication is Which?. Subscribers to Which? receive 60 pages of test results and consumer information twelve times a year. A subscription costs 60 Pounds, or US$91. At the end of 1995 Which? had a paid annual circulation of 610,000. Annual revenues from Which? and CA's other publications and activities come to 47 Million Pounds, or US$71.4 million.

Consumetenbond, or CB, the Consumers Union of The Netherlands, the Hague, Holland was founded in 1963. It now has a staff of 275 and annual revenues of 54 million Guilders, or US$31.9 million. Subscribers to Consumentengids pay 60 Guilders per year, or US$35.50, and receive 12 issues of 68 pages. At the end of 1995 Consumentenbond had 650,000 members subscribing to its main magazine. This amounted to a market penetration of 10 percent, about double that of any of the other large consumer organizations.

My organization, Stiftung Warentest, The Testing Foundation, or SW for short, was founded in 1964. It currently has a staff of 220 and annual revenues of 100 million Marks , or US$65 million. Our primary publication, Test, has a circulation of 800,000. Subscribers pay 70 Marks, or US$32, and receive 12 issues of 100 pages each. Newsstand sales account for 20 percent of our circulation.

Verbruikersunie (Flemish) or the Association des Consommateurs (French), the Consumers Union of Belgium, or VU, was founded in 1957 at about the same time as the British Consumers' Association. The staff of VU numbers 230 and its annual income is 1.2 billion Belgium Francs, or US$36 million. The 300,000 subscribers pay 2.250 Belgium Francs, or US $67.50, per year to receive 11 issues of 52 pages each of VU's chief magazine, Test Achats.

None of these organizations compares in age or size with Consumers Union, or CU, in Yonkers, New York. This "Mother" of consumer product testing organizations celebrated its 60th anniversary this year. It takes a staff of 454 and revenues of US$124 million to finance Consumer Reports and many other publications and activities. Consumer Reports is sold to 4.5 million subscribers who pay US$24 a year for 13 issues of 70 pages each.

So much for the organizational background. Now to the critical issue: To what extent should consumers accept as "correct" the product test results published by the various Consumers Unions? The credibility of product testing by consumer organizations rests on two factors: (1) the appropriateness of test methodology and the care with which it is executed and (2) the independence and integrity of the testing organizations. While the independence and the integrity of the consumer organizations is not a topic for discussion in this paper, I can assure you that CA, CB, SW and VU conduct their testing with complete independence, brooking no outside influence on their work.

It is widely acknowledged that SW has played a leading role in the scientific development of product testing methodology. For this reason I will describe the key steps in SW's product testing and evaluation procedures. Wherever appropriate, I will comment on the sometimes different procedures followed by our European "partners" and by Consumers Union, U. S. A. .

The key steps in SW's Product Testing are:

- Planning, based on readership surveys
- Test sample selection
- Test sample purchases
- Setting up the test program
- Performing the laboratory tests
- Checking the lab results
- Assigning quality ratings
- Transforming the results into a magazine report

Planning

Planning has two main goals: (1) the selection of goods and services to be evaluated for the year; and (2) the development of a month-by-month schedule of product tests for the year. A successful plan will result in monthly issues of Test that provides our readers with product test information that is useful, interesting, and seasonally appropriate.

To ascertain what products readers want us to test, we collect data from two sources: subscribers and newsstand readers. In the case of subscribers we invite a panel of 1,200 subscribers, chosen randomly from our 650,000 subscribers, to tell us what products and information are most interesting and useful for them and, more particularly, what products and topics they would like Test to deal with.

As to newsstand readers, we enclose 30,000 questionnaires in the 150,000 copies of Test sold each month at news-stands. The questionnaire asks purchasers of single issues which topic (s) triggered their interest, how helpful they found each article, and what products and topics they want to read about. This procedure yields about 800 questionnaires every month. You may ask whether, with only 800 respondents from the 30,000 inserts, we suffer a nonresponse bias. The simple answer is that do not know.

We use the surveys of subscribers and newsstand purchasers to formulate a product/topic schedule for the year and a related publication plan. Results from our surveys of readers suggest that our choice of products/topics usually conforms with what they want. Sometimes the recorded level of interest may be affected by special events, e. g., press conferences, publicity, comments from the mass media, and competition from SW's other periodical, Finanz Test. Sometimes we are just wrong: we misjudge interest in a particular product or topic.

Our partner organizations--CA, CB, VU, and CU-USA--all carry out similar readership research, employing both qualitative and quantitative analysis. The methods of the four organizations may differ somewhat, but the goal is the same: to put together the menu of product tests and topics that will best serve consumers in general, but especially our subscribers.

Test Sample Selection

The next step is Test Sample Selection. Here our goal is to select test samples that are "representative" of what will be offered in the entire market--low- and high-priced variants, technologically simple and sophisticated variants, national and private brands, variants on sale in various parts of Germany. (This process is called "Market Research" in our consumer product testing organizations. Unlike conventional "market research," our goal is not to ascertain what consumers want, but rather to buy an array of test samples that will be approximately representative of what is available in local markets across Germany).

The decision as to which brand-models to include or exclude from a special test project cannot be taken accidentally or arbitrarily. Were it so, our organizations would be vulnerable to criticism. Instead, we follow carefully chosen criteria.

Our procedures for selecting types of product types and particular brands-models for a test has four steps. We begin with **Basic Market Research**, contacting industrial associations and some important manufacturers and suppliers by both telephone and surveys. This gives us a realistic picture of what brand-models will be produced.

For a given product, this enables us to:

- classify the market and ascertain the size and nature of different market segments, as differentiated by technical features and price;
- identify distribution channels--the most important , new , and changed;
- assess the importance of private brands;
- identify identical models ("twins"), similar models, producers of models for different brand names.

Step 2 is intended to identify the most important brands, best-selling types of product and brand-models that are sold regionally. This step is carried out by sending questionnaires to about 100 retailers (including mail order catalogues and sales brochures) and analyzing the answers of the approximately 50 retailers who respond. The final outcome of Step 2 is a list of suppliers who offer the most interesting brands for this product and also a draft price list.

The most important step is Step 3. Here we send an elaborate, 3-4 page questionnaire to selected manufacturers, and to retailers with private brands. The 30 to 40 replies provide an overview of brand-models classified by features and price. Here, we also try to uncover any planned changes in the models, to identify identical models, and to learn of secondary lines.

The result is a "Market Overview" and a "Model Selection Report" of 10 to 15 pages, summarizing all the information gathered as a result of our market research. Finally, we arrive at a tentative list of brand-models that will constitute our test sample for this product.

In Step 4 we approach suppliers, seeking from them information on the availability and final features of brand-models from our tentative list of test sample models. To ferret out identical models, we have found a special questionnaire useful. In this questionnaire we ask the manufacturers specifically what the difference is between the specified model and other models. Often our special questionnaire elicits answers they might otherwise have "forgotten."

Suppliers' answers to our questions sometime result in changes in our brand-model selection, e. g. ,to make the list more up-to-date. Nonetheless, final decisions always reflect our selection criteria, market shares, and occasionally especially interesting technical features of a particular brand-model. Suppliers never influence the decision to include or exclude a particular brand-model from the final list of test samples. The Final List, assembled by the Project Officer and approved by the Technical Director, is then transformed into Buy orders for the Purchasing Department.

For some products it is more economical to buy retail audit data from commercial market research institutes like the Gesellschaft für Konsumforschung (Association for Consumer Research). Typically we buy the so-called "hit-list", which provides information on brand, price, and selected features for the 100 to 300 best-selling product types and brand-models. From this data base we can identify the most important brand-models and price ranges. In addition, we obtain actual prices for the three months prior to publication. In choosing between retail audit data versus direct contact with retailers, we evaluate the pros and cons independently for each product. The other steps in Test Sample Selection are unchanged.

Market research at VU in Belgium follows roughly the same line. Sometimes though, the necessary market research is done by the Project Officer instead of a specialist market researcher.

CB in The Netherlands maintains its own market information data bases. For the most important products the data bases are kept up-to-date by sending periodic questionnaires to manufacturers. If no data base exists for a product , CB dispatches shoppers to stores to find out how well various brand-models are selling before finalizing a test sample list. Manufacturers are only partially included in this process.

In the UK, CA utilizes the telephone to establish personal contacts with manufacturers from whom they then obtain market information directly. For certain special products the Project Officer directs the Market Research process, but relies on a Market Research Officer because CA's rules prohibit direct contact between Project Officers and manufacturers.

CU-USA relies on Readership Surveys conducted by its Survey Research Unit to find out what products and topics readers want CU to investigate. There is a separate Market Information Division with responsibility for collecting the market and product information needed to select the final list of Test Sample Brand-Models.

More specifically, CU's Market Information Division:

- provides background information on markets and market segments;
- provides general descriptions of products;
- provides detailed features charts for candidate brand-models;
- provides detailed information on model similarities;
- performs price and availability checks with manufacturers prior to publication.

In this work the Market Information Division relies on trade and company directories, trade journals and newspapers, catalogues, market share data, industry reports and product studies, consumer surveys and interviews. Thus, CU's approach is extremely thorough involving many sources. Unlike the European organizations, CU has little, direct contact with manufacturers and retailers.

Purchasing Test Samples

All the consumer product testing organizations follow the same rule in Purchasing Test Samples: they purchase anonymously so they will obtain a sample that is representative of that purchased by any average consumer. Unlike some commercial "test" magazines, the CU's never accept test samples offered by suppliers as loans or gifts. (The fear here is that the seller may take steps to insure that the sample offered as loan or as a gift will be specially prepared, purged of defects that might plague the ordinary buyer.) This practice increases the reader's confidence that the sample tested by the Consumers Unions is like the sample that he/she purchases.

Test samples for seasonal products that cannot be bought from retail establishments during the "off" season require special purchase procedures. In these cases the Consumers Unions make random selections from manufacturers' stocks and pay for them directly, instead of pretending to be ordinary consumers. Besides random selections, one other check is employed. At the end of the testing process, the CU may buy another test sample for a given brand-model anonymously from a retailer. Then the testers will undertake a careful comparison of this "late purchase" to insure that it is highly similar to that purchased from the manufacturer's stock. CA always makes "late purchases" while CB, SW, and VU do so only when they become suspicious that early variants of a brand-model differ from late variants.

Performing the Laboratory Tests

The most critical component of the entire product testing process is the **Formulation of the Test Program**. A valid Test Program must cover all aspects of product quality. The typical components are:

- Performance Tests to evaluate the main function(s) of a product or an appliance. Sometimes these tests are objective, e. g., plotting the rate at which temperature declines with time in a freezer. Other tests are subjective, e.g., users' ratings of various aspects of an electric shaver's performance (closeness, comfort, etc.); riders' ratings of the comfort of car seats, etc.
- Technical Tests to evaluate elements of performance not directly associated with use, e. g. durability, corrosion, the appropriateness and performance of materials embodied in the product, etc.
- Safety Tests, designed to ascertain the probability of the product being dangerous to users.
- Convenience In Use, typically evaluated by subjective ratings obtained from controlled use tests. ergonomic principles
- Environmental Tests, designed to detect and measure the potential harm a product might impose on the environment. Environmental Tests may deal with energy consumption; harmful chemical discharges; noise especially from engines, lawn-mowers and dish-washers; disposal problems posing environmental hazards, e. g., lead from batteries, TV screens, cosmetics, etc.

In essence, in deciding which products to test, which brand-models to purchase, in making purchases, and in testing itself, all the major consumer product testing follow essentially the same procedures. But the practices of different organizations differ in some respects. From project to project, our organizations may differ with respect to the following issues: how close they adhere to existing test standards--either those of national or international standards organizations or their own earlier procedures, what weight to assign to objective vs. subjective measurements, whether to include in their testing programs expensive tests of durability, whether to invite a review of their test protocols and quality scoring by outside experts.

As to the latter, SW invites groups of experts ("Fachbeirat"), including some from industry, to do just this. SW sends members of the Fachbeirat copies of proposed test protocols at the outset of a test program and invites criticisms and suggestions, some of which will lead to changes in protocols. SW feels that this exposure of its methods to engineers and other professionals in industry and national standards organizations contributes to SW's credibility and to the readier acceptance by outsiders of its results.

Whatever the differences in product testing practices among different CU's, there is no reason whatever for anyone--subscribers, manufacturers, retailers, the media, the public to have any doubts regarding the credibility and the scientific basis of our procedures.

Nonetheless, there is room for improvement and a role for an umbrella organization to arrange for this. In Europe the "International Consumer Research and Testing, Ltd., or IT, discusses methods and arranges for joint comparative tests, utilizing identical methods across countries. IT brings together 22 consumer product testing organizations from 19 countries. It is natural that leadership in IT is taken by the four largest organizations: CA, CB, SW and VU. It turns out that the cross-country tests of IT represent an effective means of reducing multinational manufacturers' complaints regarding our test results.

Our organizations differ considerably in their **Execution of Product Tests**. Neither SW in Germany nor VU in Belgium owns its own testing laboratories. Instead, they specify test protocols precisely and contract with external specialized laboratories who do the actual testing. By contrast, CU-USA conducts its product tests in 50 state-of-the-art laboratories at their own National Testing and Research Center in Yonkers, New York. CA in the UK and CB in The Netherlands occupy middle positions. CA has a large laboratory in Milton Keynes, an hour from London which carries out most of CA's recurring test projects, including consumer electronics. Some of CA's more "exotic" projects are farmed out to specialized, outside labs.

We in product testing have learned that the exercise of care in carrying out tests, the experience and skill of the personnel and an objective, unbiased approach to testing are all critical factors for achieving tests results that merit the confidence of friends and foes. Credible, defensible product testing can be carried out by either an organization's own laboratories or by outside laboratories.

Testing the Test Results

All the major European consumer product testing take certain steps to assure themselves that their results are "right." Typically, they send manufacturers or suppliers the results of product tests performed on that manufacturer's or supplier's brand-models. The suppliers are asked to respond if the test results appear "unreasonable," i. e., inconsistent with the supplier's own tests or experience. When manufacturers find the results "not credible," then the consumer organization reviews its tests with great care. If doubts remain, then the organization purchases additional test samples and replicates the original tests. In such cases SW buys two additional samples. SW's final judgment then rests, at a minimum, on two of three samples yielding essentially the same results.

This consultation with suppliers familiarizes them with SW's test methods and its personnel, increasing SW's credibility and manufacturers' acceptance of consumer product testing in general and SW's in particular.

Assigning Quality Ratings

The **Transformation of Test Results Into Product Ratings** is, without doubt, the most delicate and the most crucial step in the process, greatly affecting the credibility of the final product ratings.

All of the CU's obtain, as their basic measurement, a numerical quality score ranging from 0 to 100. Fundamentally, this is a weighted average of characteristic scores where product characteristics such as picture quality, tone quality, convenience, etc. are assigned (1) weights, denoting the relative importance of the characteristic and (2) characteristic scores, ranging from 0 to 10 and denoting performance on this characteristic. Weights are determined on the basis of discussions by the testing team. See Geistfeld, 1988 for a detailed description and criticism of this model. See Maynes, 1993 for the most recent discussion of this model.

Transforming the Results into a Magazine Report

The final step in the entire process involves the translation of these numerical scores into published quality ratings. Like most of the other organizations, SW uses, a 5-point, equal-interval rating scale for both overall quality and the product"s performance on particular characteristics. SW's categories are as follows:

SW's Quality Rating Scale

In German	In English	Symbolically	
Sehr gut	Very good	++	5
Gut	Good	+	4
Zufriedenstellend	Satisfactory	O	3
Mangelhaft	Poor	-	2
Sehr mengelhaft	Very poor	--	1

SW, unlike most of its partners, also publishes the weights it assigns to each major quality component. All the CU's also publish data regarding price, e. g., average price, median price, list price, "manufacturer's suggested price," or the price range encountered by the organization's shoppers. The particular statistic published varies with the organization and the product. The price data published by the CU's has a major limitation arising from the fact that prices vary greatly locally. The single price statistic published by the CU's can suggest, but not describe the extent of price variation in the market in which an individual reader shops.

We see the following advantages for the quality-price information that SW publishes in Test:

- The 5-point scales are readily understood and easy to use.
- Our publication of weights makes our quality evaluation more transparent since the reader can see for himself which quality components were most important in determining overall quality.
- The reader whose weights differ from SW is in a position to identify the brand-model that has the best overall quality, taking his own weights into account.
- SW does not regularly identify "Best Buys" as reflected in a low ratio of Price-to-Quality. We are fearful that our published median price, three months "old" at the time of publication, may mislead our readers. Instead, SW offers verbal advice ("Unser Rat") varying with the product, and sometimes identifying "Best Buys" or "Good Bets," and sometimes noting useful technical features of the product.

As to partners, CA in the UK also utilizes a 5-point scale on overall quality. Without calculating group ratings they offer a "total test score" giving a figure out of ten. Their overall quality rating takes no account of price and frequency of repair. Different weights are given to different quality components and are published. Which? calls attention to "Best Buys" by attaching a red Best Buy label.

CB'S practices are similar to those of SW. However, CB sometimes utilizes intermediate categories for overall quality, e. g., "satisfactory/good." CB publishes neither separate ratings for major quality components nor weights. They do identify "Best Buy"s and, where appropriate, "Best in Test" or "Good Bet".

The practices of VU in Belgium are very similar to those of CB. However, VU pays more attention to the price/quality ratio.

In the last five years CU-USA has veered away from the practices of other CU's in its reporting of Overall Quality. Now CU uses bar charts for most tests to denote overall quality. Here the length of the bar denotes the brand-model's performance on a 0-to-100 cardinal scale. CU does not publish its weights. However, CU does report performance on components of quality on the familiar five-point scales favored by the other CU's.

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Endnotes

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Consumer Product Testing: A Comment

Robin A. Douthitt, University of Wisconsin-Madison[1]

Thanks to E. Scott Maynes for organizing this session. I appreciate having the opportunity to study these papers in depth. I will comment on each in turn.

Sieber

Dr. Sieber's paper entitled, "Consumer Product Tests: The Reasons to Believe", was a fascinating paper, providing a rare detailed glimpse of what goes on behind the scene in consumer product testing. I would like to discuss aspects of: 1) product information gathering and testing and 2) test information presenting and how each contribute to consumer sovereignty in the market.

Product Information Gathering and Testing

For information to be useful and relevant to consumers who shop in local markets, it is imperative that a wide variety of brands and models be tested. The Stiftung Warentest (SW) practice of regularly surveying retailers about the brands of items they carry is extremely important to the ultimate relevance to consumers of product testing information. When a consumer consults product test results, if the only evaluated products they can find in their local market are name brand products, the information is of limited value in their purchase decision. The consumer is left to assess product quality themselves on private label goods. This may be possible if the good in question is a search good, but if the product is an experience or credence good, their prepurchase assessments are of limited value. If they must learn about product attributes through experience, transactions costs are increased, thus undermining consumer sovereignty. In my opinion, a lack of regional brand representation is a major limitation of published product ratings in the U. S.

I was also impressed by SW's use of independent product testing laboratories. This is a much different model than is used in the U.S. where most product tests are conducted internally by Consumer's Union. I would expect one might get different assessments of 1) important characteristics for evaluation and 2) relevant performance standards by the two groups. It would be interesting to compare evaluations of SW's external tests with the CU's internal tests for similar products to see whether differences arise.

Dr. Sieber discusses the importance of consumers having "confidence" in reported product tests. When independent experts in a field of product testing (like automotive experts) question a testing agency's report or testing methods, consumers confidence is certainly undermined. When the marginal benefit of information to a consumer is undermined, less search will be conducted and thus greater quality constant price dispersion will prevail in the market.

Finally, I would like to comment on the SW practice of publishing their weighting of product evaluative criteria. I strongly support this practice. Without the availability of such information it is difficult for the consumer to assess whether their tastes are similar to that of the average consumer whose tastes are implicit in the testing organizations recommendations.

As a researcher, I would like to have more information about how weighting schemes are derived. Are they based, for example, on surveys of consumers about the weight that they actually assign to product attributes, or on characteristics that experts believe that consumers "should" value? Consumer sovereignty is defined as production in conformity with consumer preferences. Thus, product recommendations should be based on a weighting of evaluative criteria consistent with consumer wants and desires.

How Information is Presented

Ultimately, it is the way in which testing results are presented and the ease with which they can be used that will determine whether published information will improve consumer sovereignty in the market. From the consumer's perspective, consumer product testing magazines serve to minimize their marginal costs of search by consolidating and comparing information about numerous product brands while maximizing the marginal benefits to search by presenting highly salient product price and quality information.

From my perspective, there are three elements to product testing results that are critical to providing relevant, low cost product information. First, there must be a clear and discernable way to communicate the price

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quality frontier to consumers for products as tested. Consumers need ready assessment of either product quality within their budget constraint (price range) or the price range of a given quality of product. Second, the price quality frontier must include local market information or an easy means by which the consumer can evaluate their actual market choices. This is not now possible. Assuming that all brands found in a local market are rated by a national product testing organization, if not all are available in the local market, the price quality frontier may be strikingly different when missing points are frontier points. If one further considers regional price differences, the frontier for a local market may not even resemble the national one.

I would challenge consumer product testing organizations to consider making ratings available electronically such that consumers could not only visualize a price quality frontier based on the testing organization information, but also construct their own price quality frontier based on local market conditions. This is technically possible and in my opinion would be a fantastic benefit to consumers especially when evaluating goods of widely varying quality. I would also challenge consumer organizations to further consider using this same technology to allow consumers to apply their own weighting schemes to evaluative criteria.

de Gier

Dr. de Gier's paper, "The Informed Consumer: The Believability of Research-Based Ratings", I also liked very much and will similarly comment on how I believe Consumentenbond's services enhance consumer sovereignty in the market place.

I believe that information plays a powerful role in the market place. Well informed consumers enhance the competitive nature of the market place since when they use their superior knowledge at point of purchase their actions lead to lower average prices and less price dispersion in the market. However I believe that we often underestimate the power of consumer information *per se* to affect the firm's behavior. Dr. de Gier's organization has not lost sight of this. The practice of Ghost Shopping and publishing the results of ghost consumer's experiences not only provides important market information to the consumer, but also has a powerful impact on the firm and its future business practices. Business practices in the market would improve as 1) all firms seek to avoid the negative publicity associated with an unsatisfactory published report by the ghost shopper and 2) culpable firms reassess their practices in response to the harsh light cast on them by truthful consumer information.

Consumentenbond also collects and publishes consumer complaint information filed with their office as well as information on case disposition. Again, consumer access to complaint information is extremely valuable and the firms knowledge that such complaints may be published will have a direct impact on all firm's behavior. Thus, the publication of market "inefficiencies" in a form that is salient to the average consumer will enhance the competitive nature of the market and thereby consumer sovereignty. It is an appropriate alternative to market regulation.

A good parallel example in the United States of consumer information's power on firm behavior is the U.S. Department of Transportation's (DOT) policy to track and publish the on-time performance of U.S. airline flights. Rather than developing costly regulations designed to punish airlines that were effectively misrepresenting their flight departure times, the DOT alternatively developed a system to collect on-time performance and to publicly report that information in a salient way that consumers could understand. Not only did consumer's understand, but so did competitors who used negative information about their competitors in their own commercials. Subsequently, airlines with notoriously poor on-time performance records made record improvement their mantra.

One suggestion I would offer for the publishing of consumer complaints and their resolution, is that a scheme be developed to assess the "severity of potential harm" associated with consumer complaints. This would afford consumers using information the ability to readily identify potential problems with the biggest economic (including health and safety) impacts on their households.

Finally, I believe the mediation services offered by Consumentenbond are a unique and important way to ensure that consumers are heard in the market place at a minimum cost to themselves. Too often, consumers do not complain or ask for restitution when they are treated poorly or defrauded in the market. This abdication of consumer responsibility in the competitive market place occurs increasingly because the time cost to deal with claims outweigh the perceived likelihood that consumers can successfully resolve claims. By including mediation service in their membership fees, Consumentenbond effectively offers consumers a means of managing the risk of fraud like they would other financial risks.

Endnotes

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Comments on Papers by Dr. Erik de Gier and Dr. Peter Sieber

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It is apparent that the two consumer organizations, Stiftung Warentest and Consumenten bond, are doing good, and also doing well. Their representatives here have painted a clear picture of how concerned and careful they try to be. Dr. Sieber has described a much closer pattern of contacts with producers than our American Consumers Union, even giving producers the test results before publication, without any apparent undue influence, and perhaps with beneficial improvements in the tests. What I'd like to do is make some suggestions for further progress.

First, there is the selection of what to test, based on a variety of information, and guesses whether there will be reportable differences useful to consumers. Consumers have two kinds of choices to make:

1. They have to decide how much quality they want to pay for
2. They want to get that quality at the least price.

Should we test one common price level and measure quality differences, or stratify the sample by price so consumers can see what one gets for the higher price? One of Consumer Union's most useful bits of advice was that the picture quality of VCR's was almost constant, a higher price getting you only more "bells and whistles". Stratifying by price would improve the information. Of course there is also the problem of multiple models of the same brand, so one would not want to confound price differences with brand differences. But that is a soluble sampling problem.

One aspect of selection might inadvertently reduce competition. If we select brands to test on the basis of their market share, we reduce the possibility of finding better products or better values which are attempting to get into the market. One offset might be to ask readers to report particularly good experiences (or bad ones) with new purchases. But a more important one would be to purposely include some smaller, newer entrants into the market.

Quality has dimensions, and to assign an overall index of quality requires combining them in some quantitative fashion. The problems are reduced by two scientific facts. First, any one dimension can be represented by as few as five categories, because the loss of information from grouping is $1 - 1/k^2$ where k is the number of groups. (Table 1). Even non-normal distributions don't change this much.

Table 1.

Number of Groups	$1 - 1/k^2$	% of information in the detail
2	3/4	75%
3	8/9	89%
4	15/16	94%
5	24/25	96%

Second, we know from long experience with price index numbers that rather large changes in the weighting produce trivially small changes in the index. The same goes for the numbers assigned to categories. Hence, we need not be too concerned about weighting in most cases. Indeed, it might reassure the readers to publish occasionally the results of some different weightings, showing that the rankings are mostly unaffected.

But since consumers are interested in different components of quality, and in price and in reliability, and may vary in their concerns, and since many have computers, the availability of a computer file with those details would allow them to do two things: They could assign their own weights, or they could engage in sequential sorting and elimination. The latter would be particularly useful where one element was considered crucial (extreme weight), or where one wanted to examine the price-quality relationship to search for the cost of added quality, and for bargains above the quality-price curve.

Indeed, with the plethora of information from vendors, each presenting in the most favorable way for their product, a major service of consumer organizations might be to convert this information into a file where the information is in comparable format, so one could search sequentially for desired characteristics, including price. Consumenten bond is apparently already doing this with insurance. This would improve competition, rather than having differentiated information as sellers attempt to make each brand seem unlike any other. Competitors traditionally attempt to make their product seem special, and a major benefit to consumers would be some assessment as to whether the distinguishing characteristic really mattered.

Another improvement in the use of information from surveys or questionnaires sent to readers might be statistical adjustment of non-representative samples for possible selection bias. There are ways of estimating the effect of omitting non-subscribers, non-repliers, or other sources of missing data. The more one knows about the missing elements, the better the correction. No correction is perfect, but some attention to possible bias might be welcome. Volunteered information or complaints is likely to be biased, but a survey of all users of a product or service can compare the relative satisfaction across brands with relatively little bias.

We should all keep in mind that it only takes a few informed consumers to produce vast improvements in the working of competition, and increases in the correlation between price and quality. Hence, the rest of the consumers will be more likely to "get what they pay for." Finally, sophisticated consumers need more understanding of economics than a product testing magazine can provide, and some advice on what to read might be useful. I leave you with some suggestions of my own:

- On life insurance: Read Joseph Belth (1985) or the new booklet from the California Department of Insurance.
- On tort law versus no-fault insurance: Read anything by Jeffrey O'Connell or Alfred Conard.
- On Social Security: Read Dean Leimer in the Summer, 1995, Social Security Bulletin.
- On other consumer policy issues Read: Alan Blinder, (1987). Hard Heads, Soft Hearts and Paul Krugman,(1994) especially Peddling Prosperity and The Economist, excusing their overselling of privatization.
- Ignore the rest, and see Krugman and Blinder to find out why.

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The Scientific Foundations of Consumer Advice: Some Comments

E. Scott Maynes, Cornell University[1]

For the first time ever, two of the leaders of the world's Consumers Unions, Dr. Peter Sieber and Dr. Erik de Gier, are subjecting their methods to scientific scrutiny. The first step is to describe their methods and invite the criticism of consumer affairs professionals-we in ACCI. The second step is to address the extent to which their quality assessments of products and services meet that quintessential scientific requirement--reproducability. Will others, performing the same test, achieve the same results? I applaud the willingness of Drs. Sieber and de Gier to share their methods and their experience and, equally, their willingness to subject their methods to criticism. This is in the best scientific tradition. I am confident that the process, continued, will buttress the credibility of their work and result in improvements that will increase its usefulness to consumers. I hope that, soon, Consumers Union USA will join this process and participate in the scientific review of its methods. I thank Drs. Sieber and de Gier also for telling us about the scope and influence of the four leading Consumers Unions of Europe--those in The Netherlands, Germany, the United Kingdom, and Belgium. This reminds us that consumer advice-giving is a global enterprise and that we have much to learn from consumer organizations all across the world.

Cardinal, Not Ordinal Measures of Quality

Assume that a Consumers Union has assessed the quality of a set of products with acceptable accuracy. For this information to be most usefully communicated to a reader, two requirements must be met:

1. The information must be Easily Accessible from an Information-Processing Viewpoint (Russo 1988). That is, the reader must be able to digest the information quickly, accurately, and with little effort.

2. Overall Quality Ratings and the Ratings of Characteristics should be Cardinal, not ordinal in form. That is, they should convey how much better one variety, or brand-model, is as compared with another. (Ordinal measures show that one variety is better than another without disclosing by how much.)

The preference for Cardinal, as opposed to Ordinal, measures of quality is securely grounded in the mathematics of utility maximization, making the plausible assumption that quality = utility. The same proposition may be proved in terms that Benjamin Franklin would have understood: a dollar is twice a half dollar or buys four times as much as a quarter. The significance? Suppose that the price of Variety A of a product is 25 percent higher than that of Variety B. One will "naturally" want to know, in choosing, by how much A is better than B. Given this information, the consumer will be able to select the variety that comes closest to maximizing his utility, or quality. Now we test two of our product testing magazines--Consumer Reports and Test, the German "Consumer Reports"--as to their performance on these requirements.

Our first "test" product is Blade Razors, as reported in the October, 1995 issue of Consumer Reports and the Overall Quality (= score) of Men's Blade Razors. You can see, in an instant, that Blade Razors differ substantially in quality, with the best--Gillette "Sensor Excel"--about three times as good as the worst. You can also see that Gillette "Sensor" (without the "Excel") is almost as good as the "Excel." But you cannot discern the extent of the difference because CU believes, correctly, that its measurements of quality are not that precise. So Consumers Union is a winner on both criteria, providing information on Overall Quality that is (1) easily processed and (2) cardinal in form. I salute Consumers Union for finallly serving its readers better by publishing readily understood, cardinal Bar Charts for most of its Overall Scores. Now 95 percent of CR's Overall Scores are cardinal (Maynes, tally of January to July, 1995 issues of Consumer Reports); ten years ago 85 percent were ordinal (Maynes, 1988).

However, Consumer Reports has yet to go the second mile when it comes to ratings of Characteristics, for Razors such as "Ease." From an information-processing viewpoint, CR's "blobs" are excellent: the redder the blobs, the better the performance. But the blobs fail the Cardinality criteria in two ways: (1) they are crude, with only five categories; (2) the reader does not know how much "Easier" it to use the varieties with the all-red blobs as compared with those assigned half-red blobs? When will Consumers Union come clean and publish the cardinal information on characteristics that its product testers have already compiled?

For our second test of presentation requirements, we turn to Test, the magazine published in Germany by Stiftung Warentest, the "Testing

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Foundation." The product is High-Fidelity VCR's in the February, 1996 issue of Test. Test utilizes five-point scales for both Overall Quality and Ratings of Characteristics. For Overall Quality the scale is verbal: Sehr Gut (very good), Gut, Zufriedenstellend (adequate), Mangelhaft (inadequate), Sehr Mangelhaft. For characteristics the scale is symbolic: ++, +, 0, -, --. Neither scale is cardinal. As in the case of CR's blobs, Test has not told it readers by how much a "Sehr Gut" VCR is better than a "Gut." Worse, assuming the information given me in 1990 still holds, the verbal scale does not divide the underlying 0-to-100 quality scores evenly, 0-19, 20-39, etc. Instead, they have chosen to award the "Sehr Gut" rating only to varieties with underlying quality scores well above 80).

Summing up, I would challenge all the world's consumer product testing organizations to test their own Quality Reporting against the dual requirements of (1) easy information processing and (2) cardinality.

Price And Quality

In buying, the intelligent consumer seeks the price-quality combinations that maximize utility. To understand the choice problem, consider the market for Panty Hose, a price-quality map with which I have entertained you before. And now we see the challenge for consumer product testing organizations. Exploiting Tip O'Neill's aphorism: all prices are local. Note the very considerable variation in prices for particular varieties of Panty Hose. Prices for Variety K run from $1.70 to $2.95; M from $1.80 to $3.90; C from $6.95 to $6.95, etc. etc. And some price variation is missing. The prices quoted are those that retailers would quote and honor for all customers. For some customers and some products, the practice of price discrimination by sellers via sales, "specials," bargaining, coupons, off-peak discounts, discounts to groups, and similar gambits will vastly enlarge the extent of price variation . Unhappily, the publication of the "average" price, a "typical price range, or list price by Consumer Reports fails to provides readers with an accurate picture of the actual price variation, variety constant, they may encounter in their local market.

What to do? CU and the other consumer product testing organizations are national organizations because the products whose quality they assess are distributed nationally. Should the CU's publish illustrative Price-Quality Maps for "representative" markets--large metropolises, small towns, etc--designed to suggest to readers the extent of price variation extant in the local markets where they shop?

Alternatively, do we need Local Consumer Information Systems to produce and publish Price-Quality Maps? To my knowledge, only one such exists: the Center for the Study of Services which publishes two Consumers' Checkbook magazines (circulation: 50,000 in D.C. and 15,000 in San Francisco). Might the Consumers Unions take the lead in organizing, perhaps franchising such organizations? Or can someone concoct a device that conveys local prices and national quality evaluations? Another challenge for the CUs of the world!

The Problem with "Consumer Satisfaction"

Erik de Gier, urges at the end of his paper that "... 'consumer satisfaction' could be the cornerstone of ... research strategies and ... testing work by Consumers Unions." My reaction? Yes and no!!! I believe--there is not enough time to argue it here--that "consumer satisfaction" and quality assessments converge to the same thing when they are conducted under Full Understanding/Full Information conditions (FU/FI). The Consumers Unions must never forget that it is the FU/FI conditions that give their product testing, policy analysis, and advice credibility: The CU's evaluations come close to "the truth." By contrast, services are not evaluated under FU/FI conditions. Instead, the CU's usually make the second-best assumption that ordinary consumers can make tolerably accurate assessments of the quality of services. This approach presumes that services are simpler than products and hence the quality of services, unlike products, is relatively transparent. For sellers, Consumer Satisfaction, reflecting existing rather FU/FI perceptions, are highly valuable because so many consumers--not "ours," I hope--choose on this basis. My advice: Consumers Unions should look upon the "Consumer Satisfaction" methodology with considerable skepticism before they embrace Consumer Satisfaction as a methodology.

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Geographic Variation in Consumer Prices: Implications for the Local Cost of Living

Previous research has established that considerable variation exists in consumer prices both between states and within states. This paper extends that research by implementing a procedure for estimating a cost-of-living index in localities within on state. The paper tests relationship between local prices and national prices and local structural factors. Strongest predictive relationships are found for national prices and population growth.

Michael L. Walden, North Carolina State University[1]

Introduction

It is now well-established that the cost of living varies between states. Published research has found as much as a 35 percent difference between the highest and lowest cost of living states (McMahon, 1991). However, these differences often go unrecognized in comparing the economic status of states, such as comparing per capita incomes or comparing advantages and disadvantages of where to live.

For the same reasons that the cost of living varies between states, it should also vary between locations, such as counties, within a state. If, indeed, there are significant differences in the cost of living within a state and they also go unrecognized, then there are a number of implications. First, if the cost of living is positively correlated with nominal income, then it means income disparities between counties within a state, and particularly disparities between urban and rural counties, aren't as great as unadjusted income numbers indicate. That is, the "rich" counties aren't as rich as they appear, and the "poor" counties aren't as poor as they appear.

Second, omitting cost of living differences between counties misses an opportunity for counties with lower costs to use this fact as an economic development tool. In many states, rural counties have lagged behind urban counties in economic growth. If these rural counties have lower costs of living, then this finding could be used in advertising for new business locations.

Third, many transfer programs, such as Aid to Families with Dependent Children and Food Stamps, pay the same dollar subsidy amount to all recipient households within a state. If, indeed, the cost of living varies within a state, then recipients in different locations in the state do not receive the same subsidy in terms of purchasing power.

Given this background, there are two purposes of this paper. First, the paper will develop a methodology for estimating the cost of living in local areas (counties) within a state. It is assumed that this methodology will not be direct data collection; instead, the method will be constrained to using existing data. Second, as part of this methodology, the paper will examine local variation in a wide set of consumer prices.

Previous Work

There is now a large body of evidence which suggests substantial variation in the cost of living between localities in the nation. First is evidence from direct surveys of the cost of living in different locations in the country. One part of this evidence comes from the, now discontinued, surveys of family budgets conducted by the Bureau of Labor Statistics (U. S. Bureau of Labor Statistics, 1982). The final report of these budgets for autumn 1981 showed a 12 percent difference in the cost of living between metropolitan and nonmetropolitan areas of the country for a four person family with an intermediate standard of living. The largest difference existed for rent (27 percent), and the smallest difference was found for clothing, transportation, and food at home (each with a 2 percent difference between metropolitan and nonmetropolitan areas). Furthermore, similar differences were found between metropolitan and nonmetropolitan areas in regions of the country.

Other direct evidence of locational cost of living differences comes from the American Chamber of Commerce Researchers Association (ACCRA). Each quarter ACCRA collects price data for 61 products and services in 289 locations across the country. ACCRA forms a cost of living index by taking a weighted average of these products and services. The first quarter, 1995 report showed a 166 percent difference between the highest cost of living location (Manhattan, New York City) and the lowest cost of living location (Kennett, Missouri). Again, the greatest difference existed for housing, at 526 percent (American Chamber of Commerce Researchers Association, 1995).

The last set of direct evidence comes from housing costs collected by the U.S. Department of Housing and Urban Development (HUD). HUD collects rent data as part of its housing subsidy programs. The rents are for units of a certain size and certain quality. Within North Carolina, for example, the 1993 data showed a 92 percent difference between the highest rent ($545/month) and lowest rent ($284/month) for a two bedroom apartment (U. S. Government Printing Office, 1993).

Other evidence comes from studies which estimate cost of living differences between locations. Most of these studies have focused on cost of living differences between states or metropolitan areas (Cebula 1980; Cebula & Smith 1981; Cobas 1978; Grady 1981; Haworth & Rasmussen 1973; Hogan 1984; Izraeli 1977; Langston, Rasmussen, & Simmons 1985; Roback 1988). They also use a common methodology of specifying a reduced form equation determining the cost of living, estimating the equation using available locational cost of living data, and using the results of the estimation to calculate cost of living indices for the states. These studies have found a maximum cost of living difference between the continental states (i.e., excluding Alaska and Hawaii) of 40 percent (McMahon 1991; Nelson 1991).

Only a few studies have focused on intrastate cost of living differences and estimation procedures. McMahon and Chang (1991) regressed ACCRA cost of living indices for 24 metropolitan areas and 4 regional nonmetropolitan areas on per capita personal income, the value of housing, and the percentage change in population. Parameter estimates from the regression were then applied to Illinois county data for the independent variables to derive county cost of living indices. A 60 percent difference was found between the highest cost of living county and lowest cost of living county in Illinois. Urban counties in the Chicago metropolitan area were found to have the highest cost of living.

Kurre (1992) estimated cost of living indices in Pennsylvania. He also used the ACCRA data as the basis of his analysis. Unfortunately, the ACCRA data is not available for all locations (such as counties) in a state. Kurre's research process was similar to that of McMahon and Chang. His dependent variable was the ACCRA cost of living index for all of the ACCRA communities surveyed. His explanatory variables included the community population density, total income, growth rate of total income, the local electric rate, the local cost of government services, and a regional dummy variable. Parameter estimates from this regression were then applied to data for the explanatory variables for Pennsylvania counties to form cost of living indices. Results showed a 38 percent difference between the highest and lowest cost of living counties. Urban counties, on average, had a 7 percent higher cost of living than rural counties.

Approach and Data

Our approach is similar to that of McMahon/Chang and Kurre. The ACCRA data will be used as the dependent variable in an equation which "explains" differences in the cost of living between localities. Parameter estimates from the regression equation will be applied to values of the explanatory variables for localities to form local cost of living indices.

We have, however, made some important changes to the approach of McMahon/Chang and Kurre. First, our focus is on intrastate cost of living differences in North Carolina, so our goal is to produce cost of living indices for North Carolina counties. However, unlike McMahon/Chang and Kurre, we don't use ACCRA data for a single time period and from locations over the entire country to do this. Instead, we have collected ACCRA data for several time periods (specifically first quarter, 1991 through first quarter, 1994) for the ACCRA locations in North Carolina. This data set has two advantages. First, since it is confined to North Carolina, our regression equation will not need to include factors which account for differences between states and regions in the cost of living. Second, since the data set is over time, it will allow us to test the relationship between national price trends and local price trends. McMahon/Chang and Kurre weren't able to do this.

A second change we made was to use the actual ACCRA price data rather than the ACCRA cost of living indices. One reason was necessity. The ACCRA indices are not dynamic; that is, they are reconstructed each quarter. ACCRA indices for a community can be compared only to other community ACCRA indices for the same date. ACCRA cost of living indices cannot be compared over time, either for the same community or for different communities. We constructed our own cost of living indices from the ACCRA price data. The construction of these indices is described later. A second reason for using the raw ACCRA price data is that this allowed us to test hypotheses for individual products and services.

There are three steps to our analysis. First, we estimate equations for each of 57 product and service prices.[2] The individual product or service price is regressed on a comparable national price and structural characteristics of the community. Second, we form a weighted cost of living index from the 57 products and services and regress it on a national index and structural characteristics of the community. Third, the results from the second regression are used to construct the cost of living North Carolina counties. The analysis uses the data set of 57 product and service prices for 20 North Carolina communities over each of the 13 quarters from first quarter, 1991 through first quarter, 1994.

The first regression equation uses the following form:

$$P_{ijk} = f(NP_{ij}, POP_k, LAND_k, POPGRW_k, PROF_k, PROFGRW_k, SAT_k, TAXRT_k), \quad (1)$$

where:

P_{ijk} = price of product or service i in time period j in community k;

NP_{ij} = national price of product or service i in time period j;

POP_k = population of community k in July 1993;

$LAND_k$ = land area in square miles of community k in July 1993;

$POPGRW_k$ = population growth rate of community k from 1990 to 1993, but not including annexations;

$PROF_k$ = number of persons in community k in a professional or managerial occupation in 1990;

$PROFGRW_k$ = the ratio of the percentage of persons in community k having a professional or managerial occupation in 1990 to the same percentage in 1980;

SAT_k = the Scholastic Aptitude Test total score in 1992 in community k;

$TAXRT_k$ = the property tax rate in community k in 1993.

Individual product and service price indices from the national Consumer Price Index (CPI) are the primary source for NP_{ij}. Data were taken from the March report of the Consumer Price Index for the quarter corresponding to the ACCRA data.

However, for two ACCRA prices, other national data were used in equation 1. These were the "total house purchase price" and "mortgage rate". For the "total house price", the national price index for new one-family houses sold was used (U. S. Bureau of the Census, 1991-94). For the "mortgage rate", the national effective mortgage interest rate was used (Board of Governors of the Federal Reserve System, 1991-94).

It is expected that local price trends will follow national price trends. Therefore, the sign of the regression coefficient on NP_{ij} is expected to be positive.

Other studies, such as Kurre's, include population and population density (population per land area) as regressors in their form of equation 1. However, doing this includes population twice, once standing alone, and second in the numerator of density. Such a form of equation 1 may introduce collinearity problems. In this study we simply include population (POP_k) and land area ($LAND_k$) as individual regressors. We expect the sign of the regression coefficient on $LAND_k$ to be negative. Holding population constant, greater land area will mean less demand per unit of fixed inputs, such as land, and this will lead to lower local prices.

The expected impact of population on local prices is more complicated. On the one hand, holding land area constant, higher population should lead to greater demand for fixed inputs, such as land, which in turn will be passed through in the form of higher prices. But conversely, greater local population can mean more competition in the local production of products and services and to greater economies of scale in production, both of which would lead to lower local prices. Thus, the impact of population on local prices is, a priori, indeterminant.

$POPGRW_k$ should have an unambiguous positive impact on local prices. Ceteris paribus, greater population growth will lead to greater demand for fixed local inputs and to higher local prices. Note that our measure of population growth excludes growth coming from annexation. We expect the regression coefficient on $POPGRW_k$ to be positive in equation 1.

The McMahon/Chang and Kurre studies included per capita income as a regressor in their versions of equation 1. Their reasoning is that higher levels of per capita income should increase the demand for local products and services (i.e., shift the demand curve to the right) and result in higher local prices. However, the variable that should be used is "real" per capita income, that is, per capita income adjusted for a local cost of living index. Obviously, we don't have the local cost of living index. Thus, it is somewhat circular reasoning to include unadjusted per capita income in an equation determining the local cost of living, and then to use the results of that equation to construct a local cost of living index and to further apply that index to adjusting per capita income.

Instead, we include two variables, $PROF_k$ and $PROFGRW_k$, to account for the likely higher demand for products and services of higher income persons. Professional and managerial occupations have the highest average incomes. Controlling for the total local population, a greater number of persons having a professional or managerial occupation should mean higher average local real income and a rightward shift in the demand curve. Similarly, higher values for $PROFGRW_k$, which measures the increase in the percentage of persons having professional or managerial occupations between 1980 and 1990, should be related to greater increases in local real income. On the basis of these associations, the sign of the regression coefficients for both $PROF_k$ and $PROFGRW_k$ should be positive.

The last two variables, SAT_k and $TAXRT_k$, are included to account for possible capitalization effects on local prices of differences in local public output and local tax rates. The well know Tiebout hypothesis suggests that households "vote with their feet" by leaving localities with inefficient public sectors and entering localities with efficient public sectors. This means that localities with high tax rates and not comparably higher public output will have this inefficiency capitalized into lower land values, and consequently lower local prices. Conversely, localities with high public output and not comparably higher tax rates will have this efficiency capitalized into higher land values, and consequently higher local prices.

We use as a representative measure of local public output the Scholastic Aptitude Test total score in 1992 (the last year available) in the local public school system. Clearly this score is not a result of only public school inputs. Considerable research has shown that characteristics of the students, such as parental education, are major contributors to school outcomes. We control for this effect by including $PROF_k$ in equation 1, since professional and managerial occupations require the greatest amounts of education. Therefore, we expect the sign on the regression coefficient of SAT_k to be positive.

We expect the sign on the regression coefficient of the local tax rate, $TAXRT_k$, to be negative. Controlling for the level of local public output, higher local tax rates will be capitalized into lower land values and lower local prices.

In the second equation, we construct local cost of living indices and regress those on a national cost of living index and the same local structural factors as in equation 1. This second regression is thus:

$$COL_{jk} = f(NCOL_j, POP_k, LAND_k, POPGRW_k, PROF_k, PROFGRW_k, SAT_k, TAXRT_k), \qquad (2)$$

where:

COL_{jk} = cost of living index in time period j in community k;

$NCOL_j$ = national cost of living index in time period j;

and the other variables are as defined in equation 1.

The local cost of living index, COL_{jk}, was constructed in the following way. First, the ACCRA prices for each product or service were converted to indices (based on 100 for first quarter, 1991). In doing this, the housing cost was taken as the monthly amortized payment based on the house price, mortgage rate, a 30 year term, and a 25% down payment. Second, the weights used by ACCRA in forming their index were applied to the products and services. The ACCRA weights, rather than CPI weights, were used because the ACCRA products and services don't correspond exactly to the products and services which compose the CPI market basket. Third, the local cost of living index was calculated as the product of the weights and the indices for the products and services.

The same procedure was used in developing the national cost of living index, $NCOL_j$. The CPI indices for each product or service were recalculated to make the base period (index value of 100) be the first quarter of 1991. The weights were the ACCRA weights. The national cost of living index was constructed as the product of the weights and the indices for the products and services.

The results of equation 2 were then used to construct cost of living indices for each of North Carolina's counties. The parameter estimates from equation 2 were applied to values of the regressors for each of North Carolina's counties to calculate estimates of the cost of living indices.

Results

In this section, the results for equations 1 and 2 are presented and discussed, and the county cost of living estimates are given.

Individual Product and Service Regressions

Equation 1 was formulated for each of the ACCRA products and services. The error terms in each equation are likely to be correlated either by location or time period. For this reason, the equations were estimated using Zellner's seemingly unrelated regression system.

The results are summarized in Table 1. The system weighted R^2 is 0.68. The strongest results are for NCOL. The majority (32 of 57) of the parameter coefficients for NCOL are positive and significant, as expected. Furthermore, over three times as many parameter coefficients are positive and statistically significant as are negative and statistically significant. The results are almost as strong for POPGRW. Twenty-eight of the 57 parameter estimates are positive and statistically significant, and almost four times as many of the coefficients are positive and statistically significant as are negative and statistically significant.

Table 1
Summary of Seemingly Unrelated Regression Results for All Products and Services.

	Number of Equation in Which Coefficient is:		
Regressor	Positive and Statistically Significant	Negative and Statistically Significant	Not Statistically Significant
NCOL	32	9	16
POP	15	6	36
POPGRW	28	3	26
LAND	11	8	38
PROF	4	10	43
PROFGRW	5	11	41
TAXRT	5	12	40
SAT	12	13	32

Three times as many parameter coefficients for POP are significantly positive as are significantly negative, but the majority are not statistically significant. There's no clear result for LAND, with almost equal numbers of positive and negative coefficients.

The trend for the two demographic variables, PROF and PROFGRW, is for a negative effect among those coefficients which are statistically significant. This is contrary to our expectations. However, an explanation may be the following. If professional households are more knowledgeable shoppers, then communities with a greater proportion of professional households, or with greater growth in their proportion, may have more competition among local businesses and hence lower prices. This "competitive effect" may outweigh the effect of greater demand for goods and services caused by professional households' higher incomes.

There are no consistent results for the public output variable, SAT. However, for the tax variable, TAXRT, over three times as many coefficients are statistically negative as are positive, but the majority of the coefficients are statistically insignificant.

Table 2
COL Regression Results.

	Dependent Variable: COL
Regressors:	Coefficient Estimates:
Intercept	44.6289*
NCOL	0.4671*
POP (1,000's)	0.0186***
POPGRW	0.7093***
LAND (1,000's)	0.2390
PROF (1,000's)	-0.0355**
PROFGRW	-5.8460*
TAXRT	-9.1844***
SAT	0.0330***

$R^2 = 0.4984$ F - value = 21.869***

* Significant at 0.10 level.
** Significant at 0.05 level.
*** Significant at 0.01 level.

COL Regression

The results for the aggregate cost-of-living regression are in Table 2. Almost half of the variation in the dependent variable is explained by the regression. All of the parameter estimates are statistically significant except for LAND. The positive coefficient on NCOL of near 0.50 indicates that one-half of every one point change in the national cost-of-living index is passed on to the local index.

The parameter estimates on POP and POPGRW are both positive. The results indicate that the local COL index is almost 0.02 points higher for every additional population count of 1000 persons, and the index is 0.71 points higher for every additional one percentage point in the population growth rate.

The parameter estimates for the two demographic variables are negative, indicating that the greater competitive effect of these households on local prices outweighs any positive income effect they have. The two public sector variables have the expected signs. Higher local property tax rates are capitalized into a lower local COL, and higher local SAT scores are capitalized into a higher local COL.

The parameter estimates in Table 2 were applied to values for the regressors for each of North Carolina's 100 counties to produce county cost-of-living (COL) estimates. A range of 25 percent was found between the highest and lowest cost-of-living counties.

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Endnotes

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2. We did not include four ACCRA items, apartment rent, commuter fare, monthly electricity cost, and other monthly home energy costs. The first two items weren't included because they weren't available for all North Carolina cities surveyed by ACCRA. The second two items weren't included because they are subcomponents of an included item, total monthly home energy cost.

Consumer Interests Annual *Volume 42, 1996*

Self-Employment: A Viable Economic Alternative for the California Hispanic Population

This paper examines the influence of employment sector on income of Hispanics using data from the U.S. Decennial Census. Assimilation theory and human capital theory are combined and income equations are estimated separately for Hispanic self-employed and Hispanic wage earners. The results suggest that self-employment offers economic benefits. The importance of assimilation varies by employment sector. Income differences are due more to differences in worker characteristics between the two employment sectors than to differences in rates of return to these characteristics.

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Due to the current racially unfriendly political climate in California, many Hispanics may be looking for jobs outside the mainstream wage and salary labor market. California's Proposition 187 threatens the Hispanic population, while affirmative action is losing its legal ground in helping minorities get jobs in the dominant white labor market. Self-employment may be considered a viable labor market alternative for Hispanic individuals who perceive barriers in the wage and salary sector, but is self-employment a wise move economically? If an Hispanic individual is more assimilated to the dominant white culture, would this assimilation benefit him/her financially in the self-employed sector?

Historically, self-employment has been considered a viable employment option for minority populations facing barriers to gainful employment in the traditional wage and salary labor market. According to Aronson (1991), various ethnic, religious, and racial groups have achieved upward economic and social mobility by entering the mainstream economy through self-employment and small businesses. Self-employment continues to serve this function especially among recent immigrants. However, empirical research has shown mixed results regarding the economic benefit of self-employment for Hispanic persons. For example, Butler and Herring (1991) found that self-employed Hispanics earned less money than Hispanics who were not self-employed, while Roos and Hennessy (1987) found that Mexican men benefited from self employment.

Differences in income received by self-employed workers and wage and salary workers could be due to differences in productivity related factors between the two groups. Measures of human capital are often used to capture productivity differences between workers. If workers are rewarded in accordance with their individual marginal productivities, then more productive workers will receive higher earnings. Thus, differences in educational attainment, work experience, or hours worked between the two groups could provide valid explanations for differences in income.

Alternatively, these productivity factors may be more closely correlated with income in one sector than the other. In fact, previous empirical studies report mixed results regarding returns to human capital investments (Aronson, 1991). In some studies, returns to human capital for minority workers have been higher in the self-employed sector, while other studies find higher returns in the traditional wage and salary sector. Demographic characteristics, such as gender, marital status, and presence of young children, could influence labor force attachment or effort expended on the job, thus influencing income.

We also investigate the role of assimilation. Assimilation theory refers to ethnic groups becoming integrated into the mainstream society over time (Roos and Hennessy, 1987) which could influence their economic status. Torres (1988) specified two important components of assimilation. The first component is the process by which members of an ethnic group become more like the majority group and gradually lose their distinctive ethnic identity. Torres (1988) measured this aspect of integration into the mainstream society in the U.S. with variables capturing command of the English language, U.S. citizenship, and time transpired since immigration. Second, Torres suggested that assimilation is facilitated if one has control over means of production, as opposed to merely supplying labor to the labor market. Torres captured this aspect of assimilation with measures of educational attainment and of amount paid for real estate taxes and property insurance premiums (as a proxy for property ownership).

Previous empirical research has produced mixed results regarding the impact of assimilation on earnings for self-employed Hispanics. Brock, Evans, and Phillips (1986) found a positive relationship between time lapse since immigration and income, and a negative relationship between immigrant status and income for self-employed workers. Torres (1988) found both of these factors to be insignificant in his research on Mexican American business persons, but found a positive relationship between command of the English language and income. He also found that in larger cities, U.S. citizenship was related to lower income of Mexican American business persons.

This paper explores whether self-employment is a viable economic alternative to employment in the traditional wage and salary labor market for Hispanic persons, and whether or not assimilation provides financial benefits to Hispanics selecting self-employment.

Data

Data are from the five percent weighted sample of the 1990 Census of Population and Housing, Public Use Microdata Samples for California. Nearly 34% of the U.S. Hispanic population lives in California, and therefore the California data provide a convenient sample for exploring income differentials by employment sector within the Hispanic population. Persons 16 years of age and over who self-identified Spanish, Mexican, Central or South American, Puerto Rican, Cuban, Dominican, or other Spanish/Hispanic origin, and who were either employed in their own unincorporated business or as wage and salary employees are included in this sample. Individuals who own incorporated businesses are excluded due to differences in reporting self-employed income (Torres, 1988). Individuals employed in the military are excluded due to differences between civilian and noncivilian employment. Individuals involved in farming activity are retained in the sample since separate analyses indicate that the results are not significantly affected by their inclusion. These criteria produced a sample of 16,952 Hispanic persons, 4.7% (N=789) who were self-employed and 95.3% (N=16,163) who were wage and salary employees.

Model

Assimilation theory is combined with a human capital earnings model (Becker, 1993; Blinder, 1973; Oaxaca, 1973) to develop an income model for the Hispanic population. By adding these additional theoretical constructs we propose to better assess the factors which impact Hispanic income in both the self-employed and the wage and salary sectors.

The Hispanic earnings model defines income as a function of human capital, assimilation, and demographic variables.[4] The dependent variable is the sum of net nonfarm self-employment income and wage or salary income. Negative numbers are allowed in order to represent the full range of possible income reported by the self-employed. Human capital is measured with two continuous variables and a set of six dummy variables for occupation. Age is a continuous variable with the minimum age in the sample being 16 years. Time invested in work is measured by hours worked per year which is constructed by multiplying weeks worked in 1989 by usual hours worked per week in 1989. The dummy variables for occupation are: managerial and professional; technical, sales, and administrative support; service (the omitted category); farming, forestry, and fishing; craft, precision production, and repair; and operators, fabricators, and laborers.

The assimilation variables mirror Torres' (1988) study. Command of the English language and the ability to speak more than one language are measured with a set of five dummy variables: does not speak English; speaks more than one language and: English is not spoken well, English is spoken well, English is spoken very well; and English in the only language spoken (the omitted category). Citizenship is a dummy variable that equals 1 for persons who are U.S. citizens and 0 otherwise. Five dummy variables measure the amount of time since immigration, ranging from recent immigration (between 1980 and 1990) to being born in the United States (the omitted category). Education, a traditional human capital variable,[5] is categorized in this study with the assimilation variables following Torres (1988). Educational attainment is measured with four dummy variables: less than a high school diploma, high school diploma (the omitted category), some college, and at least a bachelors degree. Taxes and insurance is the total amount paid for real estate taxes and property insurance premiums, which proxies for property ownership.

Three demographic variables are included and all three are dummy variables. Gender is equal to 1 if the individual is male; 0 otherwise. Child is equal to 1 if children under age 18 are present in the household; 0 otherwise. Married is equal to 1 if the individual is currently married; 0 otherwise. Thus individuals who are widowed, divorced, separated, or never married are all coded as zero.

Analysis

Descriptive statistics

The univariate results on income by occupation within each employment sector suggest that there may be positive economic benefits to self-employment for Hispanic persons. The mean income for the Hispanic self-employed is 25% higher than the mean income for the Hispanic wage earner ($19,419 and $15,519, respectively). However, the median income is slightly higher for the Hispanic wage earner than the Hispanic self-employed ($12,000 and $11,000, respectively). This result is due to a more skewed distribution of income among Hispanic self-employed persons. Specifically, income is more concentrated at the higher end of the income distribution among Hispanic self-employed persons resulting in a larger difference between the mean and median income relative to Hispanic wage earners. For both the Hispanic self-employed and the Hispanic wage earner, mean income was highest in the managerial and professional occupation group. The lowest mean income for Hispanic self-employed was in the service occupation group, while the lowest mean income for Hispanic wage earners was in the farming, forestry, and fishing occupation group.

Means and standard deviations for the dependent variable and the explanatory variables used in the income equations are summarized by employment sector in Table 1.[6] Approximately 60% of both Hispanic self-employed and Hispanic wage earners are male. Similarly, 17% of Hispanic self-employed and 18% of Hispanic wage earners have children under age 18 present in their household. However, relative to the Hispanic wage earner, the Hispanic self-employed is slightly older (39 years and 33 years, respectively), more likely to be married (63% and 53%, respectively) and works more hours per year (1,703 hours and 1,684 hours, respectively).

The occupational distribution of the Hispanic self-employed and Hispanic wage earners differ with a higher percentage of Hispanic self-employed in managerial and professional; service; and craft, precision production, and repair occupations, and a higher percentage of Hispanic wage earners in technical, sales, and administrative support; and operator, fabricators, and laborer occupations.[7] With respect to the assimilation variables, both the Hispanic self-employed and the Hispanic wage earner have similar characteristics with the exception of time since immigration and amount paid in taxes and insurance. Similar proportions of Hispanic self-employed and Hispanic wage earners were born in the U.S., but among immigrants, Hispanic self-employed were more likely to have immigrated prior to 1970 and less likely to have immigrated after 1980 relative to Hispanic wage earners.[8] Hispanic self-employed also paid a higher amount for real estate taxes and property insurance premiums ($248 and $167, respectively).

Table 1.
Means and Standard Deviations of Variables by Employment Sector

Variable	Hispanic Self-Employed		Hispanic Wage Earner		Test statistic for difference between samples
	Mean	Std. Dev.	Mean	Std. Dev.	
Income (1989 dollars)	19,419.27	25,499.90	15,518.67	14,383.19	t=4.26***
Human Capital					
Age	39.34	12.72	33.18	11.89	t=13.34***
Hours per year	1702.75	912.07	1,684.09	756.96	t=1.66*
Occupation					χ^2=135.20***
Managerial/Prof	0.15	0.36	0.11	0.31	
Tech/Sales/Adm	0.20	0.40	0.24	0.43	
Service	0.28	0.45	0.18	0.38	
Farm/Forest/Fish	0.09	0.29	0.08	0.27	
Craft/Proc/Rep	0.16	0.37	0.14	0.34	
Oper/Fab/Lab	0.11	0.31	0.26	0.44	
Assimilation					
English					χ^2=6.99
Does not speak English	0.08	0.27	0.10	0.30	
Speaks English, not well	0.18	0.38	0.18	0.39	
Speaks English, well	0.20	0.40	0.17	0.38	
Speaks English, very well	0.33	0.47	0.34	0.47	
Speaks only English	0.21	0.41	0.21	0.41	
Citizen	0.56	0.50	0.55	0.50	χ^2=0.96
Immigration					χ^2=51.44***
Immigrated 1980-1990	0.23	0.42	0.28	0.45	
Immigrated 1970-1979	0.19	0.39	0.21	0.41	
Immigrated 1960-1969	0.14	0.35	0.08	0.27	
Immigrated before 1959	0.05	0.22	0.03	0.18	
Born in the U.S.	0.39	0.49	0.40	0.49	
Education					χ^2=4.05
Less than high school	0.48	0.50	0.50	0.50	
High school graduate	0.21	0.41	0.21	0.41	
Some college	0.23	0.42	0.22	0.42	
Bachelors degree or more	0.08	0.27	0.06	0.24	
Taxes and Insurance	247.83	350.20	167.00	273.57	t=6.39***
Demographic					
Gender	0.61	0.49	0.59	0.49	χ^2=1.59
Children < 18 yrs. present	0.17	0.37	0.18	0.38	χ^2=0.75
Married	0.63	0.48	0.53	0.50	χ^2=33.49***
Number	789		16,163		

*p<.10 **p<.05 ***p<.01

Statistical methodology

To determine if the factors associated with income differed by employment sector within the Hispanic population, OLS multiple regression analysis was used to estimate income equations separately for Hispanic self-employed and Hispanic wage earners. A

Chow test was used to test for differences in estimated coefficients between the two regressions (Chow, 1960).

To determine which individual coefficients were statistically different between Hispanic self-employed and Hispanic wage earners, OLS multiple regression analysis was used to run a fully interacted model on the pooled sample of Hispanic self-employed and Hispanic wage earners (Gujarati, 1970). The dependent variable was the sum of net nonfarm self-employment income and wage or salary income. The explanatory variables included the set of human capital, assimilation, and demographic variables, as well as a dummy variable for employment sector (equal to one if the person was self-employed), and variables constructed by interacting each explanatory variable with the employment sector dummy variable. The statistical significance of these interaction variables was tested by the usual t-test ($p<.05$).[9] A significant coefficient for the interaction variables indicated that the effect of the explanatory variable on income was different between Hispanic self-employed and Hispanic wage earners.

Results

The income equations for Hispanic self-employed and Hispanic wage earners are summarized in Table 2. The income equation for Hispanic self-employed explains 26% of the variance in income, and seven of the twenty-three explanatory variables are significant at the .10 level or better. The income equation for Hispanic wage earners explains 42% of the variance in income, and twenty of the twenty-three explanatory variables are significant at the .05 level or better.

Two general results emerge from these results. First, there are many similar results between the two groups in the relationship between income and the various independent variables. Age, hours worked per year, having a college degree, amount paid in taxes and insurance, gender, and marital status are positive and statistically significant for both Hispanic self-employed and Hispanic wage earners. For both groups, being in a managerial or professional occupation increases income compared to being in a service occupation (the omitted category). Further, being in the technical, sales, and administrative support; or craft, precision production, and repair; or operator, fabricator, and laborer occupations, relative to a service occupation, increases income for Hispanic wage earners, while being in the farming, forestry, and fishing occupation decreases income.

Second, three of the five assimilation variables provide important explanatory power in the wage earner equation, but not in the self-employed equation. Having a strong command of the English language, being a U.S. citizen, and having spent a longer period of time in the U.S. since immigrating are all positively associated with income for Hispanic wage earners, but are not statistically significant for Hispanic self-employed.[10]

The Chow test for equality of the regression coefficients is significant at the .01 level, indicating the predictors of income are statistically different between Hispanic self-employed and Hispanic wage earners. In order to determine which estimated coefficients are statistically different, the fully interacted model was estimated. The coefficients which are statistically different from each other between the two equations are indicated with a dagger in Table 2 and include hours worked per year, being in a managerial or professional occupation, amount paid in taxes and insurance, and gender.

Table 2.
Determinants of Income for Hispanic Persons by Employment Sector

Variable		Hispanic Self-Employed		Hispanic Wage Earner	
		Coefficient	Std. Error	Coefficient	Std. Error
Human Capital					
Age		120.81*	72.92	150.74***	8.62
Hours per year	†††	5.94***	0.90	7.26***	0.12
Occupation (omitted: Service)					
Managerial/Professional	†	8795.66***	2870.93	6073.56***	369.42
Tech/Sales/Admin		3728.30	2487.73	3023.25***	286.94
Farm/Forest/Fish		-3874.94	3414.34	-810.23**	384.07
Craft/Prec/Rep		2174.57	2868.17	3499.66***	321.94
Oper/Fab/Lab		443.96	3065.74	1489.66***	271.70
Assimilation					
English (omitted: speaks only English)					
Does not speak English		-1553.00	4093.41	-3280.86***	422.37
Speaks English, not well		-5318.66	3305.74	-3415.14***	358.39
Speaks English, well		128.78	3083.42	-1839.48***	332.31
Speaks English, very well		-3025.59	2387.35	-1544.25***	253.54
Citizen		435.50	2488.95	1028.45***	285.72
Immigration (omitted: born in U.S.)					
Immigrated 1980-1990		-848.27	3434.08	-1696.08***	365.40
Immigrated 1970-1979		-199.48	3208.52	-912.28***	336.37
Immigrated 1960-1969		2503.92	3172.76	-33.08	394.61
Immigrated before 1959		-836.89	4160.89	309.83	541.05
Education (omitted: high school grad.)					
Less than high school		-2778.12	2195.36	-1146.74***	243.94
Some college		82.99	2396.02	2290.07***	266.26
Bachelors degree or more		12881.00***	3452.95	8595.28***	419.88
Taxes and Insurance	†††	11.85***	2.37	5.06***	0.33
Demographic					
Gender	†††	10820.00***	2359.90	4645.66***	233.06
Children < 18 yrs. present		93.21	2718.66	291.15	286.94
Married		3872.11**	1783.42	2805.89***	194.80
Constant		-7646.19	4921.10	-7370.61***	537.90
Adjusted R^2		0.26		0.42	
F		13.01		499.56	
Number		789		16,163	

*$p<.10$ **$p<.05$ ***$p<.01$
†Estimated coefficients are significantly different between the two samples, $p<.10$
†††Estimated coefficients are significantly different between the two samples, $p<.01$

Hours worked per year is positively associated with income for both Hispanic self-employed and Hispanic wage earners, but the effect is larger for wage earners. Each additional hour worked increases income by $7.26 for wage earners, compared to only $5.94 for self-employed. Occupational category is also an important determinant of income. Being in a managerial or professional occupation compared to a service occupation increases the income of both Hispanic self-employed and Hispanic wage earners, but the effect is much larger for self-employed. The income of self-employed Hispanics in managerial or professional occupations is $8,796 higher than the income of self-employed Hispanics in service occupations compared to a difference of only $6,074 among Hispanic wage earners.

The coefficients for the amount paid in real estate taxes and insurance premiums (a proxy for property ownership) are statistically different between Hispanic self-employed and Hispanic wage earners. An additional dollar paid in taxes and insurance increases income of Hispanic self-employed by $12 compared to approximately $5 for Hispanic wage earners.

For both Hispanic self-employed and Hispanic wage earners, males have higher income than females, however the gender difference is much larger among Hispanic self-employed. The income of male Hispanic self-employed persons is $10,820 higher than the income of female Hispanic self-employed persons, compared to a gender difference in income of only $4,646 among Hispanic wage earners.

Decomposition

As previously noted, the mean income for Hispanic self-employed in this sample is 25% higher than the mean income for Hispanic wage earners ($19,419 and $15,519, respectively). Differences in income between Hispanic self-employed and Hispanic wage earners could be due to differences in characteristics of the two samples (for example, Hispanic self-employed are older and work more hours per year on average than Hispanic wage earners). Alternatively, these income differences could be due to differences in how the individual characteristics are rewarded or valued in the labor market (for example, a strong command of the English language and U.S. citizenship were positively associated with income for Hispanic wage earners, but are not statistically significant for Hispanic self-employed).

In order to identify the relative importance of these two different factors, a decomposition method was used to ascertain the extent to which the observed differences in income could be explained by differences in characteristics between the two samples (mean values of the variables summarized in Table 1) or by differences in the rate of return to these characteristics in the labor market (estimated coefficients in Table 2). Table 3 presents the results of the decomposition.

The first and second columns indicate by how much, in actual dollars and as a percent of the mean income of Hispanic wage earners, the income of Hispanic wage earners would change if they had the characteristics of the Hispanic self-employed, but these characteristics were rewarded at the rate for the wage and salary sector. Under this situation, total income for the Hispanic wage earner would increase by $2,427, representing a 15.6 percent increase. Most of this difference is attributable to differences in the age distribution of workers in the two sectors. If Hispanic wage earners had the older age distribution of the Hispanic self-employed workers, all else equal, their income would increase by 6.0 percent ($929). Other

Table 3
Decomposition of Difference in Income Between Hispanic Self-Employed and Hispanic Wage Earners

	Change in income of Hispanic wage earner[a]			
	With characteristics of Hispanic self-employed rewarded at the rate for the wage and salary sector		With characteristics of the wage earner rewarded at the rate for the self-employed sector	
	Dollars	% change	Dollars	% change
TOTAL	$2427	15.6%	$750	4.8%
Human Capital				
Age	929	6.0	-993	-6.4
Hours per year	397	2.6	-2176	-14.0
Occupation				
Managerial/Professional	243	1.6	299	1.9
Tech/Sales/Admin	-121	-0.8	169	1.1
Farm/Forest/Fish	-8	0.0	-245	-1.6
Craft/Proc/Rep	70	0.5	-186	-1.2
Oper/Fab/Lab	-223	-1.4	-272	-1.8
Assimilation				
English				
Does not speak English	66	0.4	173	1.1
Speaks English, not well	0	0.0	-343	-2.2
Speaks English, well	-55	-0.4	335	2.2
Speaks English, very well	15	0.1	-504	-3.2
Citizen	10	0.1	-326	-2.1
Immigration				
Immigrated 1980-1990	85	0.5	237	1.5
Immigrated 1970-1979	18	0.1	150	1.0
Immigrated 1960-1969	-2	0.0	203	1.3
Immigrated before 1959	6	0.0	-34	-0.2
Education				
Less than high school	23	0.1	-816	-5.3
Some college	23	0.1	-486	-3.1
Bachelors degree or more	172	1.1	257	1.7
Taxes and Insurance	409	2.6	1134	7.3
Demographic				
Gender	93	0.6	3643	23.5
Children < 18 yrs. present	-3	0.0	-36	-0.2
Married	281	1.8	565	3.6

[a] Positive (negative) numbers indicate the amount by which income of Hispanic wage earners would increase (decrease)

important effects are the result of the higher number of hours worked and the higher amount paid in taxes and insurance by the self-employed.

The third and fourth columns indicate by how much, in actual dollars and as a percent of the mean income of Hispanic wage earners, the income of Hispanic wage earners would change if their own characteristics were rewarded at the rate for the self-employed sector. Under this situation, total income for the Hispanic wage earner would increase by $750, representing a 4.8 percent increase. There are several relatively large effects, but these effects offset each other resulting in a total change of less than five percent. The largest effect is due to differences between the two employment sectors in the return to male workers. For both Hispanic self-employed and Hispanic wage earners, males have higher incomes than females, however the gender difference is much larger in the self-employed sector. If the wage and salary sector realized the same gender difference in income as the self-employed sector, Hispanic wage earners would increase their income by 23.5 percent ($3,643). Additionally, the higher return to the amount paid in taxes and insurance in the self-employed sector (a measure of command of resources) would increase income of Hispanic wage earners by 7.3 percent ($1,134). More than half of this gain is off-set by the lower returns to hours worked per year and age in the self-employed sector, which would decrease income of Hispanic wage earners by 14 percent ($2,176) and 6.4% ($993) respectively. Overall, differences between the two employment sectors in worker characteristics have a larger impact on differences in income than differences in the rate at which the characteristics are rewarded.

Conclusions and Discussion

Self-employment can offer economic benefits to Hispanic workers. The mean income for the Hispanic self-employed in this sample was 25% higher than the mean income for Hispanic wage earners. Hispanic self-employed individuals worked more hours per year, paid a higher amount for taxes and insurance, were slightly older, and more likely to be married than Hispanic wage earners. Higher percentages of Hispanic self-employed persons were in managerial or professional; service; and craft, precision production, and repair occupations. The amount of time since immigration was higher for Hispanic self-employed compared to Hispanic wage earners.

The estimated income equations explained 26% of the variance in income of Hispanic self-employed and 42% of the variance in income of Hispanic wage earners. Age, hours worked per year, being in a managerial or professional occupation, having a college degree, the amount paid in taxes and insurance, gender and marital status were positive and statistically significant for both Hispanic self-employed and Hispanic wage earners. Assimilation variables affected the income of Hispanic persons, however, the nature of these effects differed between Hispanics in the self-employed and in the wage and salary sector. Having a strong command of the English language, being a U.S. citizen, and a longer period of time transpired since immigrating to the U.S. were all positively associated with income for Hispanic wage earners, but not statistically significant for Hispanic self-employed. The results for Hispanic wage earners are consistent with previous research which shows economic benefits to integrating into the mainstream society. However, similar to Torres (1988) we find that integration into the mainstream society appears to yield no economic benefit for Hispanic self-employed persons.

Four of the predictors of income were statistically different between Hispanic self-employed and Hispanic wage earners. Being in a managerial or professional occupation and being male had much larger positive effects on the income of self-employed relative to wage earners. The positive impact of hours worked per year is larger for Hispanic wage earners relative to Hispanic self-employed. Assimilation variables reflecting control of resources were important in increasing income of both self-employed and wage earners, but the effect of the amount paid in taxes and insurance was larger for self-employed.

The results of the decomposition suggest that income differences between Hispanic self-employed and Hispanic wage earners are due more to differences in worker characteristics between the two employment sectors than to differences in the rate at which the characteristics are rewarded. If Hispanic wage earners had the characteristics of the Hispanic self-employed but these characteristics were rewarded at the rate for the wage and salary sector, their income would increase 16 percent. This difference is attributable to differences in the age distribution, the hours worked per year, and the amount paid in taxes and insurance between the two sectors. On the other hand, if Hispanic wage earners received the rate of return for the self-employed sector, their income would increase by only 4.8 percent.

The finding that the gender difference in income is much larger among Hispanic self-employed compared to Hispanic wage earners justifies additional research. The income of male Hispanic self-employed persons is $10,820 higher than the income of female Hispanic self-employed persons, compared to a gender difference in income of $4,646 among Hispanic wage earners. This corresponds to a ratio of female to male income of 0.44 in the self-employed sector, compared to 0.70 in the wage and salary sector. While the gender difference in earnings is not a surprising finding in itself, it is interesting that the gender difference is much more pronounced in the self-employed sector. Further research should investigate the factors contributing to such a pronounced gender difference in income among Hispanic self-employed persons.

Devine (1994) in a study of the total civilian labor force found larger gender differences among self-employed workers relative to wage and salary workers in average age, years of schooling, usual weekly hours worked, and the proportion employed full-time, year round. Self-employed men were slightly older than self-employed women (44.3, 43.4), while men and women in the wage and salary sector were similar in age (36.5, 36.4). Self-employed men also had more years of schooling than self-employed women (13.6, 13.3), while men and women in the wage and salary sector had the same level of education (13.0). In both employment sectors the usual weekly hours worked was higher for men than women, and higher proportions of men were employed full-time, year round, but the gender differences were larger in the self-employed sector. Average hours worked by men and women were 44.6 and 35.3 in the self-employed sector, compared to 40.9 and 35.5 in the wage and salary sector. The proportions of men and women employed full-time, year round was 71.0 and 45.4 in the self-employed sector, compared to 69.1 and 52.7 in the wage and salary sector. In both sectors, women were less likely than men to be in executive, administrative, and managerial; and craft, precision production, and repair occupations (higher paying occupations), and more likely to be in service occupations (lower paying occupations), but there was more occupational segregation by gender in the self-employed sector than in the wage and salary sector.

These larger gender differences in human capital and occupational structure in the self-employed sector compared to the wage and salary sector in the total labor force are consistent with our findings of a larger gender difference in income among Hispanic self-employed relative to Hispanic wage earners. Separate analyses of the predictors of income for Hispanic self-employed women and men, and decomposition of the gender difference in income into the component due to differences in worker characteristics and the component due to differences in how these individual characteristics are valued in the labor market would provide important information for accurately interpreting the large gender effect on income among Hispanic self-employed persons.

Several limitations of this research should be noted. First, our data only represent Hispanics from California, limiting our ability to generalize to the total Hispanic population. Second, Hispanics are not a homogenous population and combining the various subgroups which comprise the Hispanic population may lead to misleading findings for individual subgroups (i.e., Mexican Americans, Puerto Ricans, Cubans, etc.). Third, our data did not allow measurement of an individual's work ethic or access to capital which are likely to be important determinants of income for the self-employed.

There are policy implications from this research for small business, diversity education and human capital investment. With respect to small business, self-employment appears to be a viable economic alternative for Hispanics. Therefore, the Small Business Administration and Small Business Development Centers should continue to provide support targeted for Hispanic business persons.

The importance of assimilation into the mainstream culture for Hispanics appears to vary by employment sector. Hispanic self-employed workers do not benefit financially from assimilation, while Hispanic wage earners do benefit. Imposing the mainstream attitudes to become one culture will not necessarily improve the economic status of all Hispanics. Therefore, the continued support of Affirmative Action and diversity education is necessary.

Finally, education benefits both the Hispanic self-employed and the Hispanic wage earner. Therefore, programs which promote education for both the youth and the adult population should be continued and supported.

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Endnotes

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4. The classification of explanatory variables into human capital, assimilation, and demographic variables is judgmental. Variables placed into one category may well reflect effects related to another category. For example, following Torres (1988), we have included education as an assimilation variable to capture or proxy for control over means of production. Education is also a commonly used measure of human capital. We do not attempt to differentiate between these two effects in this research.
5. See endnote 4.
6. Statistical tests were conducted to determine which characteristics were significantly different between Hispanic self-employed and Hispanic wage earners. The test statistic for continuous variables is constructed as $(X_1-X_2)/\sqrt{(s_1^2/n_1 + s_2^2/n_2)}$ where X_i, s_i^2 and n_i are the mean, estimated variance and number of observations in the i^{th} sample. This test statistic has a t-distribution. The test statistic for the categorical variables and the dummy variables is constructed as $\sum (O_i - E_i)^2/E_i$ where O_i and E_i refer to the observed frequency and expected frequency, respectively, for a given cell. This test statistic has a chi-square distribution. The chi-square test for dummy variables is statistically equivalent to use of the test statistic $(P_1-P_2)/\sqrt{((P_1(1-P_1))/n_1) + ((P_2(1-P_2))/n_2)}$ where P_i and n_i are the sample proportion and number of observations in the i^{th} sample (Smith, 1991, pp. 471-475). This test statistic has a Z-distribution.
7. The chi-square test for the set of occupation variables was significant. Pairwise tests for each occupation variable were statistically significant for all categories except farming, forestry, and fishing. Test statistics are available from the authors.
8. The chi-square test for the set of immigration variables was significant. Pairwise tests for each time period were statistically significant for all categories except for immigration between 1970 and 1979, and U.S. born. Test statistics are available from the authors.
9. A table summarizing these results is available from the authors.
10. Coefficients on the variables measuring command of the English language are interpreted relative to speaking only English (the omitted category). All coefficients are negative and differ in magnitude in a consistent way. Thus the negative effects on income of Hispanic wage earners of not speaking English or speaking English, but not well, are much larger than the negative effect of speaking English well or very well. Similarly, more recent immigration (between 1980 and 1990) has a larger negative impact on income of Hispanic wage earners than earlier immigration (between 1960 and 1969).

Reasons for Retirement: Estimation and Implications

Comparing four different criteria to define when retirement takes place, this research examines five reasons for retirement: personal choice, mandatory retirement, poor health, loss of opportunity, and dissatisfaction with job. Multinomial logit results indicate that both the size and significance of independent variables are sensitive to the criteria used to define when retirement takes place. The only clear policy implications are related to retiring for reasons related to poor health. These individuals appear to be the least likely to be able to maintain adequate incomes in retirement.

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Without a doubt, a better understanding of the behavior of older persons as they move out of the labor market is needed if we are to address continued well-being of individuals as they age. But why take one more look at retirement decisions when there is already a vast literature on the topic? There are several motivating factors. First, with the exception of "voluntary" versus "involuntary" reasons, there has been little research conducted on dissaggregated categories of reasons for retirement. Second, much of the research has been descriptive in nature, and thus has not fully examined how antecedents to retirement affect the reason why people retire. Third, of the studies that used longitudinal data (most did not), the most comprehensive used a data stream that ended in 1981. Finally, there is no agreed upon definition of retirement in the literature. These methodological differences have made studies of the retirement decision difficult to compare. Yet, information about why people retire is extremely important for making inferences about the well-being of aging individuals by illuminating their future labor market and income maintenance possibilities.

Review of Literature

Retirement Definitions

A precursor to understanding why people retire is the knowledge of the point in time retirement takes place. What criteria have been used to define that point in time? No consistent definition has been used. Criteria defining full retirement have included self-reports (Kosterlitz, 1986; Chirikos et al., 1989; Gustman et al., 1986; Parnes et al., 1985; Palmore et al., 1985), complete labor force withdrawal (no work hours reported) (Hanoch et al., 1983; Hayward et al., 1985; Honig et al., 1985; Quinn, 1981), receipt of a pension or social security income (Boaz, 1987; Palmore et al., 1985; Parnes et al., 1985; Sjogren, 1986), working less than a given number of hours, usually between 1,000 and 1,800 during the year before retirement (Holden, 1988; Palmore et al., 1985; Parnes et al., 1985), and combinations of the above (Haug et al., 1992; Parnes et al., 1985; Palmore et al., 1985; Palmore et al., 1984).

Differences in definitions make comparing results of retirement decision studies difficult. Add to this differences in data sets used and a quagmire is quickly entered that leaves one wondering whether we have a handle on the retirement question at all. Never-the-less, several factors have been found to be associated with reasons for retirement.

Why do People Retire?

Much of the literature has attributed the retirement decision to issues surrounding earnings and wealth, mandatory retirement policies, Social Security, private pensions, and health status (see Ransom et al. 1989; Ruhm 1989). Other research has identified changes in earnings, job displacement (unemployment), and policies relating to age discrimination and mandatory retirement as contributing to the retirement decision (Shapiro et al., 1987; Andriasani et al., 1987; Clark, 1987; Johnson et al., 1987; Hanks, 1990).

Some researchers have examined the relationship between health and other variables on the retirement decision. However, the measurement of health status is difficult. Anderson and Burkhauser (1985) found that using self-reported measures of health bias (downward) the effect of wages on retirement. Using the RHS Sickles and Taubman (1986) found positive effects of poor health on retirement and positive effects of Social Security and pension payments on poor health. Sammartino (1987) found that poor health increases the probability of retirement and that older workers with health limitations do not respond to increases in Social Security payments by retiring later.

The most comprehensive study (Palmore et al., 1982; Palmore et al., 1985) compared findings using seven different data sets, including the National Longitudinal Study of Labor Market Experience (NLS) and found that socio-economic variables including education, occupation, and poverty status are important determinants of retirement. Job characteristics were also important, and include job tenure, pension benefits, and retirement policy. This is one of the few studies that compared self reports of retirement with objective definitions.

Ozawa and Law (1992) used the 1982 New Beneficiary Study to examine reason for retirement. Although they had information on several different reasons for retirement, chose to estimate the probability of retirement based on voluntary versus involuntary reasons. They found that non-white, less educated, and lower income individuals had a higher probability of reporting being retired due to involuntary retirement. Those with pensions and having asset income had lower probabilities. Interestingly, this study included gender as a dummy variable and found that being a women decreased the probability of retiring for involuntary reasons. However, given women's different experience with the labor market, it is most likely that simply treating gender as an intercept shifter is not sufficient for analysis.

None of the studies reviewed above dissaggregated reason for retirement farther than retire/not retire or voluntary/involuntary retirement. The few studies that have categorized retirement reason can be classified as either being descriptive or predictive. Three are descriptive studies. Sherman (1985) compiled data from the 1982 New Beneficiary Survey and found that the majority (40%) of individuals report retiring because they wanted to. Twenty-seven percent reported health problems, 10% lost their job, 7% were subject to mandatory retirement, 5% retired because of pension eligibility, and 3% retired for family reasons. Parnes et al. (1985) used the NLS to examine reasons for retirement by race. Fifty-eight percent of white males retiring between 1976 and 1981 reported retiring voluntarily, 31% for health reasons, 7% because of being discouraged from the work force, and 4% faced mandatory retirement. The figures for black males are 42%, 48% 7% and 3%, respectively. Quinn (1981) compiled a trend in reasons for retirement and found that in 1980 almost 50% of men reported retiring because they wanted to, 20% for health reasons, 20% because they lost their job, and about 10% for other reasons. Compared to those that retired in 1940, the percentage retiring because they lost their job or retired for health reasons fell by more than one half, while wanting to retire as a reason increased five fold.

Two studies are predictive. Palmore et al. (1985) used canonical correlation analysis to analyze retiring for health and compulsory reasons as compared to personal choice using both the NLS (1966-76) and the Duke Longitudinal Study (1969-76). The strongest predictor of retiring for health reasons is having a work limiting health condition. Low socioeconomic status and being younger are also predictors. Older age, liking one's job, and not being self-employed are predictors of compulsory retirement. The researchers conclude that those who like their jobs work until they are required to leave. Results were consistent across both data sets.

Henretta et al. (1992) estimated how various retirement antecedents impact on reason for retirement (lost job, voluntary, health, compulsory). Using the 1982 New Beneficiary Study, a proportional hazard model, and a definition of retirement of "non-continuous work for more than 100 days," they found that voluntary retirees are affected by family situations including having a spouse or school age children at home. In addition, they found that those that retire because they have lost their job have shorter work force tenures and lower incomes. Health status was found to impact all reasons for retirement.

Based on previous literature, we clearly do not have a handle on how antecedents to retirement impact on the reasons why people retire. This study attempts to fill that void by constructing profiles of individuals before they retire, using four different definitions of retirement, and estimating the probability of retiring for health reasons, mandatory retirement policies, lost job opportunities, and job dissatisfaction compared to wanting to retire.

Methodology

Data

Because men and women have traditionally followed very different labor market patterns, this study used only data from the Older Men cohort of the National Longitudinal Survey of Labor Market Experience (NLS). This is a panel data set collected from 1966 through 1990 by the Bureau of Labor Statistics, U.S. Department of Labor. Data forming part of the older men cohort include an original sample of 5,020 men who were 45-59 years in 1966. The original samples were drawn by the Bureau of the Census and were representative of the civilian population residing in the 50 states. The surveys monitor the pre- and post-retirement years with measures of type of employment of the respondent, work circumstances, income, educational attainment, and family structure and change.

Defining Retirement

By tracking an individual from 1966 through 1990, a detailed description of the when the retirement transition takes place can be made. Establishing criteria to describe this point in time has been difficult for researchers. This study estimates the probability of retiring for a number of different reasons and compares the sensitivity of these estimates across 4 retirement criteria groups. These include: 1. Self reported retirement; 2. Worked fewer than 1,000 hours/year; 3 Receipt of Social Security or pension; and 4. Receipt of Social Security or pension and worked fewer then 1,000 hours per year.

The way retirement is defined depends on the purpose of the results. Retirement can be considered an event, a status (Parnes et al., 1985), or a process (Kolodinsky and Avery, 1995). For this research, all persons defined as retired, regardless of the criteria used, have gone through a process and reached a status of being retired according to the data. In other words, we tracked individuals until they met the criteria being used. For example, a person could work fewer than 1,000 hours in a given year and then become employed full time again, and then work fewer than 1,000 hours in another year. This individual would not be considered retired under definition 2 until the work hours were below 1,000 continuously through the last year of data available in 1990. Defining retirement as "last retirement" and tracking individuals' process of retirement allows us to use the results to examine policy issues relating to economic well-being during the retirement years. With the exception of self reports, objective definitions include most labor market experience that previous research has classified as "post-retirement."

Dependent Variable

The dependent variable is reason for retirement. This study includes five different reasons for retirement: individual choice, mandatory retirement, health reasons, job discouragement, and pressure of job/job dissatisfaction/other.

Independent Variables

Variables chosen for the analysis are those found by previous research to be important predictors of the retirement decision. They include several economic variables, including salary of the respondent (SALR), social security income (SOCSEC), non-wage income, including transfer payments (NWINC), age (AGE), years of education (EDUC), whether poor health limits working ability (HLIM), whether an individual's spouse, if present, has poor health that limits working ability (HLIMSP), job satisfaction (JOBSAT), race (RACE), union participation (UNION), the unemployment rate in the region (UNEMP), self employment status (SELFEM), and plans to work after retiring (RETPLAN). It is important to note that variables representing salary of respondent (SALR) and job satisfaction (JOBSAT) are measured the *survey year before the individual is classified as being retired*. All monetary variables are reported using 1989 dollars, the most recent year of data available to define the retirement process. One dummy variable representing birth/retirement cohorts is included. Other studies using the NLS data have not included cohort effects. (COHORT) was chosen out of five cohort variables originally formed.[3] Descriptive statistics are provided in Table 1. Note that because the groups are not mutually

Table 1. Mean and Standard Deviation of Variables

Variable	SELF RPT	<1000 HOURS	PENSION/SS	PEN/SS &<1000
RACE	0.26 (0.44)	0.31 (0.46)	0.30 (0.46)	0.29 (0.45)
AGE	62.27 (4.10)	61.06 (3.99)	60.65 (3.30)	62.93 (3.76)
EDUC	9.43 (3.76)	9.08 (3.98)	9.40 (3.92)	9.74 (3.86)
UNION	0.36 (0.48)	0.30 (0.46)	0.34 (0.47)	0.42 (0.49)
PENSION	0.44 (0.50)	0.30 (0.46)	0.51 (0.50)	0.45 (0.50)
SALARY	23440.00 (18960.0)	0.19E+05 (0.18E+05)	23840.00 (19580.00)	24060.00 (19270.0)
SOCSEC	2414.00 (4195.00)	2820.00 (4393.00)	2309.00 (4015.00)	4420.00 (5005.00)
NWY	11050.00 (15180.0)	0.13E+05 (0.18E+05)	11040.00 (17300.00)	13070.00 (15200.0)
HLIM	0.42 (0.49)	0.47 (0.50)	0.40 (0.49)	0.45 (0.50)
HLIMSP	0.25 (0.43)	0.29 (0.45)	0.25 (0.43)	0.27 (0.45)
DEP	0.25 (0.43)	0.27 (0.45)	0.30 (0.46)	0.24 (0.43)
SELFEM	0.10 (0.30)	0.17 (0.37)	0.12 (0.33)	0.06 (0.23)
RETPLA	0.08 (0.26)	0.60E-01 (0.24)	0.09 (0.29)	0.07 (0.25)
JOBSAT	0.78 (0.42)	0.67 (0.47)	0.76 (0.43)	0.65 (0.48)
UNEMPL	7.11 (2.91)	6.68 (3.03)	6.85 (2.80)	7.70 (3.10)
COHORT	0.38 (0.49)	0.27 (0.45)	0.29 (0.45)	0.33 (0.47)
N	1105	930	1141	512

exclusive, that is, an individual who is reported as being retired by one definition may or may not be reported as retired using another definition, the usual bivariate tests of significance can not be used to identify significant differences in descriptive variables across retirement timing criteria.

Empirical Specification

Given there are five categories (y=0,1,2....,5) of reason for retirement, a multinomial logit model is used to estimate the parameters. Let P_0, P_1,....P_5 be the probabilities associated with these categories. The object is to express the probabilities in binary form. To estimate the model, consider that an individual falls into one of 5 categories (y=0,1,....,5) with the probabilities given above. These probabilities can be expressed in linear form as where X is a vector of independent variables.

$$\log \frac{P_1}{P_0} = \alpha_{10} + \alpha_{11}X \tag{1.a}$$

$$\log \frac{P_2}{P_0} = \alpha_{20} + \alpha_{21}X \tag{1.b}$$

$$\log \frac{P_3}{P_0} = \alpha_{30} + \alpha_{31}X \tag{1.c}$$

$$\log \frac{P_4}{P_0} = \alpha_{40} + \alpha_{41}X \tag{1.d}$$

Statements for log (P_3/P_2), etc., can be derived from the above equations; for example,

$$\alpha_{32} = \alpha_{31} - \alpha_{21} \tag{2}$$

Equations 1a through 1d are represented empirically by:

$$\text{RETIREMENT REASON CATEGORY} = \alpha_0 + \alpha_1\text{AGE} + \alpha_2\text{RACE} + \alpha_3\text{EDUC} + \alpha_4\text{UNION} + \alpha_5\text{PENSION} + \alpha_6\text{SALARY} + \alpha_7\text{SOCSEC} + \alpha_8\text{NWY} + \alpha_9\text{HLIM} + \alpha_{10}\text{HLIMS} + \alpha_{11}\text{DEP} + \alpha_{12}\text{SELFEM} + \alpha_{13}\text{RETPLAN} + \alpha_{14}\text{JOBSAT} + \alpha_{15}\text{UNEMP} + \alpha_{16}\text{COHORT} + \text{ERROR}$$

where the five retirement reason categories include individual choice, mandatory retirement, health reasons, job discouragement, and job dissatisfaction/other. This model is estimated using each of the four different criteria used to define when retirement takes place and a maximum likelihood, multinomial logit procedure available in the statistical software package LIMDEP (Greene, 1985). No hypotheses are formulated as to the expected direction of effect of the independent variables on retirement reason, as previous research has shown that different retirement criteria lead to different empirical results.

Results

A first look at the data reveal that the percentage of persons reporting retiring for various reasons is sensitive to the criteria used to define retirement. Table 2 identifies the percentages and compares our findings to those of other researchers. Clearly, the way one defines *when* retirement takes place has implications for how people respond to questions asking *why* they retire. And, not only do the percentages differ from other research, other researchers' findings differ from each other (Parnes et al., 1985; Quinn, 1991; Sherman, 1985). A few of the figures can be explained. First, the relatively low percentage of persons reporting retiring for health reasons in the <1,000 Hrs + Pension/Social Security column is explained by the fact that many persons who retired due to health limitations are missed in this category if they retired before being eligible for social security or pension benefits. Second, the relatively low percentage of persons reporting retiring for mandatory reasons by Parnes et al. (1985) were not based on actual reasons given by individuals, but were imputed based on information available. Third, the relatively low percentage of persons reporting retiring for mandatory reasons in the Sherman (1985) study retired June 1980-May 1981, years after mandatory retirement policy was outlawed at the national level.

Tables 3 through 6 present results from the multi-nomial logit estimation. The log-odds of retiring for a given reason compared to retiring voluntarily are given in each column under the reason for retirement. The ME columns indicates the marginal effect of each of the significant independent variables on that reason for retirement. For example. For those who self reported retirement and retired for compulsory reasons, men who belonged to a union were 1.41 times more likely to report being compared to retiring for voluntary reasons.

A few generalizations can be made from the results. First, regardless of the criteria used to define when retirement takes place, results indicate that younger individuals of a lower socio-economic status are more likely to retire due to poor health than to retire voluntarily. Second, for those reporting mandatory retirement, once the cohort variable is held constant (the oldest individuals who retired earliest) there are no variables that significantly affect this reason for retirement for each of the objective criteria. However, for self reporters of retirement belonging to a union, being eligible to receive a pension and planning to work after retirement increase the likelihood of reporting mandatory retirement compared to voluntarily leaving the labor force, while self employed individuals have

Table 2. Percent of Respondents Reporting Various Reasons for Retirement.

	SELF REPORT	1000 HRS	PENS/SS	1,000 + PENS/SS	Sherman (1981 data- NBS)	Parnes et al. (1966-1981 data-NLS)[a]	Quinn (1980 data)
Voluntary	41.0	45.8	47.3	50.5	40.0	58.0	45.0
Health	31.5	29.2	33.2	24.2	27.0	31.0	20.0
Mandatory	11.4	12.2	9.4	13.0	7.0	4.0	
Discouraged	13.4	12.7	10.0	12.3	10.0	7.0	22.0
Dissatisfied Other	3.5	5.4	6.5	4.2	16.0		13.0
N	1105	930	1141	512	496,000	860	[b]

[a] Reasons are imputed from data.

[b] Compiled from various sources.

a lower likelihood of reporting mandatory retirement. Third, reason for retirement is affected by the health variable for many of the criteria defining retirement and for reason for retirement. This is in contrast to the findings of Palmore et al. (1982) who found that overall, retirement is not affected by health status. Finally, overall, note that both the size and significance of variables are sensitive to the criteria used to define retirement.

The above results invite an intriguing policy discussion. If one is interested in issues of income maintenance after retirement, it does not matter which criteria is used to define when retirement takes place when health is given as a reason. As these individuals are more likely to report health problems, tend to retire earlier and are of lower socio economic status, it appears that their ability to support themselves by labor force participation after retirement is limited. And, the self report criteria also indicates that these individuals are less likely to have a pension to rely on. To the extent that these individuals are younger, they may not be able to tap into the social security system when they retire. There are real questions of economic well-being for this group of retirees. Compared to other research, Ozawa and Law (1992) and Palmore et al. (1985) found similar results for those persons not retiring voluntarily. The most restrictive criteria of when retirement takes place also gives an indication that these individuals were dissatisfied with their jobs and thus may be more likely to be in non-professional occupations. This is supported by Henretta et al. (1992) who specifically included white collar occupation in their analysis.

With the exception of retiring due to poor health, there are few policy recommendations that can be made for those that retire involuntarily for other reasons. One other study analyzed retiring due to job discouragement (Henretta et al., 1992). Our results differ from this study. In addition, there is no

Table 3. Estimates of Reasons for Retirement: Self Report

VARIABLE	Mandatory	ME	Health	ME	No Opportunity	ME	Dissatisfied	ME
Intercept	-3.52*	.03	8.9***	2.18	-1.6		-3.4	
RACE	-.189		.18		-.58*	.56	.7	
AGE	-.037		-.13***	.88	-.01		.03	
EDUC	-.036		-.07***	.93	.02		.02	
UNION	.346*	1.41	-.11		-.27		.59**	1.80
PENSION	.392*	1.48	-.66***	.60	-.51**	.60	-.54*	.58
SALARY	.501E-05		-.15E-04***	.99	.91E-05		-.22E-04**	.99
SOCSEC	-.998E-05		.22E-05		-.13E-04		-.12E-03***	.99
NWINC	-.261E-05		-.38E-05		-.20E-05		-.13E-04	
HLIM	.095		.82***	.44	.04		.32	
HLIMSP	-.002		.32*		.23		.002	
DEP	.051		-.06		.48**	1.62	.04	
SELFEMP	-2.28**	.10	-.07		.73**	2.07	-.61	
RETPLAN	.969***	2.63	.11		.13		.50	
JOBSAT	-.396		-.39**	.68	.09		-.51*	.60
UNEMP	-.001		.02		.06		.07*	1.07
COHORT	1.14***	3.12	.21		.38		.82*	2.27
Log Likelihood	-1319.8		-1391.5		-1391.5		-1391.5	
N=1105	127		349		149		39	

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consistency in results across retirement criteria for retirement reasons other than health. This leads one to question Ozawa and Law's (1992) conclusions about involuntary retirement as a classification without further breakdown. Thus, our results are most useful to suggest strategies for improving future research in this area.

The bottom line is that we need to first agree on a policy that sets up the standards as to when a person is officially retired. Until that decision is made, we will continue struggle with comparison of research findings and their meanings. Chirikos and Nestel (1992) have suggested researchers use a most restrictive definitions of retirement (< 1,000 hours + receipt of social security and/or pension). Kolodinsky and Avery (1995) suggest that objective criteria be used to define the point in time when an individual is retired, and choose either an hours criteria or a receipt of pension or social security criteria. This study has shown that although results are sensitive to all criteria used, the objective definitions of retirement lead to the most comparable results. Thus, we suggest that objective criteria be used in future studies of the retirement decision.

Table 4. Estimates of Reasons for Retirement: < 1,000 Hours

VARIABLE	Compulsory	ME	Health	ME	No Opportunity	ME	Dissatisfied	ME
Intercept	-3.44		8.6		-2.1		.52	
RACE	21		-.03		-.18		.46	
AGE	-.037		-.13***	.88	.01		-.05	
EDUC	.013		-.08***	.92	.07**	1.07	-.07	
UNION	122		-.28		-.08		.28	
PENSION	188		-.28		-.22		-1.0***	36
SALARY	-.40E-05		-.25E-04***	.99	-.79E-05		-.13E-04	
SOCSEC	-.20E-04		-.22E-04		-.22E-04		-.69E-04*	.99
NWINC	-.45E-05		-.93E-05**	.99	-.17E-04***	.99	-.51E-05	
HLIM	-.28		1.3***	3.65	-.01		-.17	
HLIMSP	-.47*	.63	.1		-.07		-.2	
DEP	-.04		-.14		.45*	1.56	.21	
SELFEMP	-1.23**	.29	-.34		.55*	1.73	-.55	
RETPLAN	.45		.17		.33		.59	
JOBSAT	.11		-.16		-.09		.41	
UNEMP	-.02		.01		.007		.17***	1.18
COHORT	.73**	2.07	-.09		.59*	1.80	.90*	2.45
Log Likelihood	-1176.1		-1176.1		-1176.1		-1176.1	
N=930	114		272		119		51	

Table 5. Estimates of Reasons for Retirement: Pension/Social Security Recipient

VARIABLE	Mandatory	ME	Health	ME	No Opportunity	ME	Dissatisfied	ME
Intercept	-11.69***	.00	6.1***	4.45	-1.4		5.8*	330
RACE	.001		-.004		-.69***	.50	-.23	
AGE	.155***	1.16	-.08***	.92	-.77E-03		-.11**	.89
EDUC	.72E-.04		-.08***	.92	.04		-.13**	.88
UNION	.038		-.005		.18		.37	
PENSION	.244		-.17		-.13		-.46	
SALARY	.38E-05		-.32E-04***	.99	.17E-05		-.40E-04***	.99
SOCSEC	-.35E-05		-.29E-05		-.79E-05		.38E-05	
NWINC	.25E-05		-.45E-05		.42E-06		-.11E-04	
HLIM	-.169		1.2***	3.3	.02		-.38	
HLIMSP	-.014		-.07		.26		-.52	
DEP	.235		.34*		.28		.56	
SELFEMP	-1.67**	.18	-.1		.82***	2.27	-.50	
RETPLAN	.459		.56*	1.75	.12		-.81	
JOBSAT	-.50*	.60	-.53***	.59	-.59		-.46	
UNEMP	.11		.06**		.04		.15***	1.16
COHORT	.273		.24		-.59		.59	
Log Likelihood	-1391.5		-1319.8		-1319.8		-1319.8	
N=1141	108		379		115		75	

Table 6. Estimates of Reasons for Retirement: Pension/ Social Security and < 1,000 Hours

VARIABLE	Mandatory	ME	Health	ME	No Opportunity	ME	Dissatisfied	ME
Intercept	-5.15*	.005	11.0***		-2.4		-.13	
RACE	.467		.14		.11		.68	
AGE	.051		-.17***	.84	.91E-03		-.06	
EDUC	.018		-.11***	.89	.09**	1.09	-.05	
UNION	-.106		-.11		.26		.38	
PENSION	.452		-.30		-.63**	.53	-.67	
SALARY	.108E-04		-.28E-04***	.99	-.12E-04		-.14E-04	
SOCSEC	-.464E-05		-.27E-04		-.14E-04		-.11E-04	
NWINC	-.143E-04		-.14E-04*	.99	-.46E-05		-.13E-04	
HLIM	-.141		1.6***	4.95	-.14		.20	
HLIMSP	-.303		.38		.04		.01	
DEP	-.124		-.29		.37		1.2***	3.3
SELFEMP	-8.81		-.44		.44		.70	
RETPLAN	-.085		-.25		1.0*	2.72	1.34	
JOBSAT	-.084		-.06		.09		.16	
UNEMP	.013		.02		.04		.19***	1.2
COHORT	.92**	2.50	-.43		.38		1.5	
Log Likelihood	-696.1		-696.11		-696.11		-696.11	
N= 512	67		124		63		22	

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Endnotes

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3. See Kolodinsky and Avery (1995) for a complete review of how the cohort variables were formulated.

Estimates of Income and Wealth Inequality Among Elderly Households

Based on the Gini coefficient and the Lorenz curve approach, this paper analyzes both income and wealth distribution of elderly households using the 1989 Survey of Consumer Finance data. The results suggest that wealth is distributed more unequally among elderly households than is household income. Those elderly households who have almost no wealth to access beyond government welfare support may be vulnerable to any financial uncertainty in life. It is important for public policy makers to recognize this fact and to better target the social welfare programs to the most needy people.

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Introduction

A sharp change in social and demographic structures in the United States in the 1990s is the increasing population of the elderly. People 65 or over comprised 8.6% of the total population by 1960 (U.S. Bureau of the Census, 1989a). This percentage had increased to 12.6% in 1991 (U.S. Bureau of the Census, 1992) and it will jump to 23% by the year 2080 (U.S. Bureau of Census, 1989b). Meanwhile, the expectations by many Americans for future financial deprivations after retirement continued to rise (Crystal and Shea, 1990). Almost 30 percent of the individuals age 45 to 54 in a 1988 Transamerican survey believed that their income sources would not be able to meet their retirement consumption needs (Transamerica, 1988).

Where do the elderly stand economically? Many different economic indicators have been used to analyze economic well-being. Money income is the most frequently used measure of household economic status. However, two households at the same income level but different wealth holdings could access different consumption bundles (Burkhauser et al., 1985). Since a large proportion of the elderly's resources is in the form of assets, including home equity, Crystal (1990) suggested that measuring economic status of the elderly by annual income alone may be misleading. Ownership of a house represents a certain amount of liquid assets, as well as, a current economic resource by means of households avoid the need for income to pay rent or make mortgage payments. However, few studies of economic status of the elderly have incorporated asset measures.

Crystal (1990) stated that, for households aged 65 and over, wealth is more unequally distributed than for younger ones, whereas income is distributed more equally. The primary reason is that the government-sponsored Social Security and other pension plans are viewed as beneficial to the elderly. Slesnick (1994) mentioned that as the income inequality fell, the rise in earnings inequality was offset by the increase in government transfers to the poor. Consequently, the economic well-being as well as the relevant social policy and welfare systems used to finance social security and other pension plans is a matter of intensive public concern.

According to the U.S. Department of Health and Human Services (1994), asset income becomes an important part of retirement income in addition to Social Security and labor income. Thus, income and wealth together are the important economic indicators in formulating public policies for the aged population. If the asset income plus settled estates of the elderly can contribute a fair amount of support for their own living, the cost of supporting the elderly may not be a big fiscal burden, given the fact that there is an increased proportion of elderly population to working age cohorts in our society. Therefore, the objectives of this study are to test income and wealth distributions among the elderly and to further analyze their economic status.

Review of Literature

A widely used method for conducting research on inequality relies upon the Gini coefficient. For example, Danziger (1980) studied the effect of the wives' labor force participation on the family income distribution in 1975 based on the Gini coefficient method. The Current Population Survey data revealed that for white families, the Gini coefficient was increased 5% by the wives' earnings. However, for nonwhite families, the Gini coefficient was not affected by the wives' earnings. Thus, the wives' earnings increased family income inequality slightly for whites and had no effect on the family income inequality of blacks during the entire 1959 to 1974 period.

Based on the Gini coefficient approach, Wolef (1987) estimated household wealth inequality in the U.S. from 1962 to 1983. Using the data from the 1962 Survey of Financial Characteristics of Consumers and the 1983 Survey of Consumer Finances, Wolef demonstrated that wealth inequality remained relatively constant between 1962 and 1973, declined rather substantially between 1973 and 1979, but increased quite dramatically between 1979 and 1983. Moreover, fungible wealth was distributed uniformly more unequally than total household wealth, and the inequality of financial wealth was higher than that of fungible wealth each year from 1973 to 1983. The dispersion of mean total household wealth across age groups appeared the highest in 1983.

A more recent study by Weicher (1994) tested changes in the distribution of wealth by using the 1983 and 1989 SCF data. The findings indicated that both the income and wealth were more unequally distributed in 1989 than in 1983. Moreover, the Gini coefficient for income rose more than that for wealth. The author further concluded that the increase in income inequality caused the increase in wealth inequality, or vice versa. The results also revealed that when automobiles, home equity and the present value of future pensions are excluded from wealth, the Gini coefficient showed a higher value than when these assets are included.

Wolef's 1994 study again tested for trends in household wealth in the United States, focusing on the two subperiods of 1962 to 1963 and 1983 to 1989. Based upon the 1983 and 1989 SCF data, the results showed a sharp increase in the inequality of household wealth between 1983 and 1989. Whereas the average wealth (in 1989 dollars) of all households increased by 23 percent from 1983 to 1989, that of the top one percent ("super-rich" group) grew by 47 percent. The Gini coefficient for the super-rich group showed a high increase, from 0.80 to 0.84. Meanwhile, the bottom four quintiles all lost in relative terms, as their share of total wealth declined from 19 to 15 percent. In comparison, there was no significant difference in wealth inequality between 1983 and 1962.

Crystal and Shea's study (1990) examined income and wealth inequality among the elderly based on the Gini coefficient method. This study used the data from the 1983-84 Census Bureau's Survey of Income and Program Participation. By adding the annual household income with an annuity adjusted from home equity, interest bearing assets, and corporate equities, Crystal and Shea indicated that the mean adjusted income was significantly higher for the elderly than for other population groups. However, the adjusted income was distributed more unequally among the elderly than the rest of the population even after considering the large increases in benefit programs.

Hurd and Shoven (1985) examined the effects of government welfare programs on income and wealth distributions of elderly households and their inflation vulnerability. Applying the 1969 Longitudinal Retirement History Survey data, they found that the income of the aged kept up during the period of growing inflation, and their nonhuman wealth even increased slightly in real terms. Government programs, such as indexing Social Security, should take the credit for much of the inflation protection. This was especially true for the poor elderly.

In summary, income and wealth are important economic resources, and the distributions of these resources are affected by the relevant social welfare programs. The previous studies have shown that the average wealth of all households has increased from the 1970s to the 1980s, and, consequently, wealth distribution has changed as well. These changes of income and wealth holdings can affect the economic well-being of elderly households.

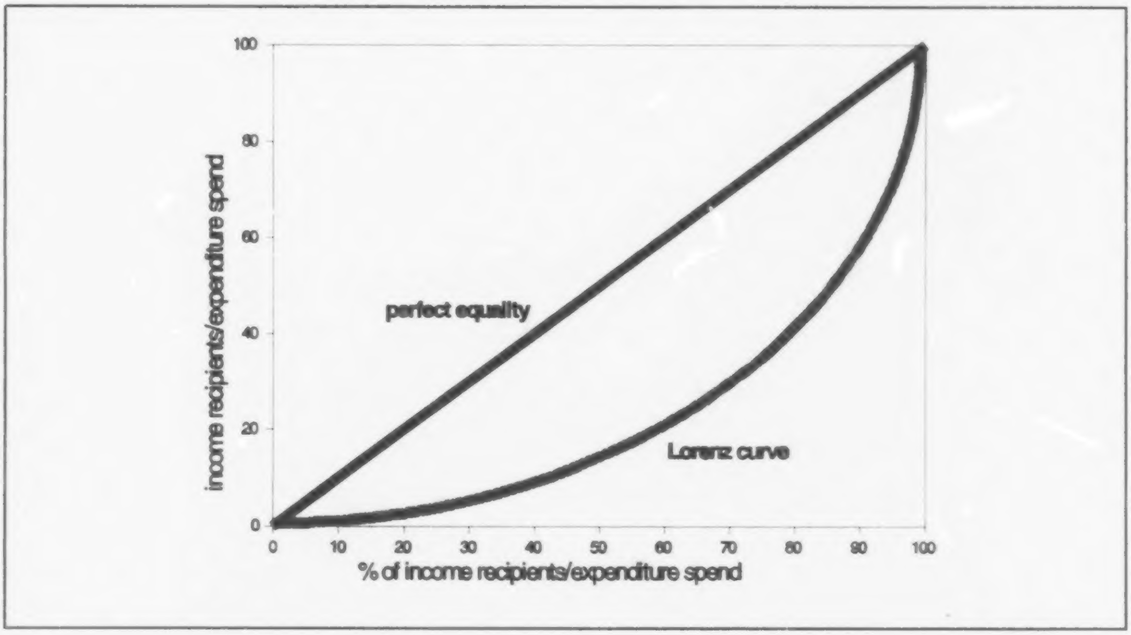
Methodology

There are different approaches to measure income and wealth inequalities. Most of the measures were derived from the Lorenz curve (Gastwirth, 1972); and the Gini index was the best single measure of inequality due to its easy interpretation (Morgan, 1962). In this study, both the Lorenz curve and the Gini index are calculated in order to measure income and wealth inequalities among the elderly households.

In the Lorenz curve approach, households are ranked from the lowest to the highest according to their annual money income or level of wealth. Households are then divided into equal population groups, typically quintiles. As shown in Figure 1, the vertical axis of the Lorenz curve represents the cumulative share of aggregate income or wealth from each quintile; and the horizontal axis represents the cumulative share of income or wealth that households received.

The Lorenz curve describes the relationship between the percentage of income receipts and the percentage of income. Perfect equality is represented by the 45° diagonal line passing through the origin. If the 45° line described the distribution, then each household would receive the same amount of income or own the same amount of wealth. Perfect inequality can be represented by a right-angle Lorenz curve that coincides with the horizontal and vertical axes, which means only

Figure 1
Example of Lorenz Curve



one household receives all the money income or owns the whole amount of wealth.

The Gini ratio, which is closely related to the Lorenz curve approach, is twice the area between the 45° diagonal line and the Lorenz curve to the area under the 45° line. The range of the Gini coefficient is from 0, indicating a perfect equality, to 1, indicating a perfect inequality. A Gini of 1 means all of the wealth is owned by just one household, while a Gini of 0 means every household owns an equal share of wealth (Pen, 1971).

Data and Variables

The data used in this study are from the 1989 Survey of Consumer Finance (SCF), which was conducted by the Survey Research Center of the University of Michigan for the Federal Reserve Board. The survey contains a nationally representative cross-sectional sample and a supplementary representative high-income sample drawn from IRS records. The high income sample concentrates in the top few percent of the wealth distribution.

Avery, Elliehausen and Kennickell (1988) suggested that wealth estimates based on household survey data have been significantly lower than those based on independent institution estimation. This underestimation of wealth can be attributed to an undersampling of wealthy households. Including additional high-income households in the sample overcomes this limitation. Consequently, relative weights for the cross-sectional data were constructed so that the sample households can adequately represent the universe of all households.

According to Garman and Forgue (1994), household wealth is defined as the value of assets minus the value of liabilities. Household liabilities include home mortgage debt, such as home equity lines of credit, debt on other real estate, lines of credit other than home equity loans, outstanding credit card debt, education loans, automobile loans, etc.

For household wealth, different measures are used for the analysis in this study:

(1) total household wealth = financial assets + real estimate assets + automobiles and other vehicles - household liabilities,

where financial assets contain the following household holdings: liquidity assets, such as, checking accounts, savings accounts, money market accounts and certificates of deposit; investment assets: such as, publicly traded corporate stocks, bonds, such as government bonds, U.S. savings bonds, corporate bonds, municipal and foreign bonds, mutual funds, IRAs and Keoghs, trusts, the cash value of life insurance policies, the current value of pensions, real estate assets, business ownership, limited partnership and the future value of Social Security benefits.

(2) financial wealth = total wealth - real estate assets - automobiles and other vehicle assets.

Financial assets reflect the assets which can be easily converted into cash, while owner-occupied housing, automobiles and other vehicles assets are generally held for consumption purposes. Wolef (1994) suggested: "Although owner-occupied housing is relatively easy to sell and often held for capital gains, housing cannot be sold without some suitable substitute provided."

(3) capital wealth = financial wealth - liquidity assets - cash value of pension and insurance

Capital wealth primarily holds the assets for long-term financial gains and capital investment. It excludes the ones for the purposes of consumption and retirement. In general, capital wealth is held by those households in the upper wealth distribution (Wolefe, 1983).

Elderly households are defined as (1) a two-person household (including a husband and wife family) with both being 60 or over; and (2) a single-person household with the reference person being 60 or over. Elderly people living in nursing homes or living with people who are under 60 are excluded from the study. Given these restrictions, the sample size is 868.

Findings and Discussion

Figure 2 shows the wealth composition of the elderly households. Home (owner-occupied housing) is the most important asset category, comprising 47%, 48%, and 58% of gross assets for single male households, single female households, and married couple households each. On average, the elderly households hold about 12% of liquid assets. Among different types of households, married couple households hold the least amount of liquid assets whereas single male households hold the highest level of liquid assets. Financial securities comprise 22% of total household assets for single female households; while this proportion is only 14% for single male households. The average debt to asset ratio is about 8% for all elderly households.

Table 1
Distribution of income and wealth by types of elderly households, 1989.

	One-person Female	One-person Male	Married Couple	All Households
Income				
25th percentile	$6,000	$6,000	$13,000	$7,000
median	8,000	10,000	21,000	15,000
75th percentile	15,000	17,000	32,000	27,000
Total wealth				
25th percentile	$2,000	$3,000	$49,000	$16,630
median	17,000	44,250	108,330	78,810
75th percentile	90,180	112,030	256,001	190,009
Financial wealth				
25th percentile	$200	$200	$1,946	$600
median	1,200	5,700	21,001	12,000
75th percentile	37,000	43,946	76,000	64,000
Capital wealth				
25th percentile	$0	$0	$0	$0
median	0	0	0	0
75th percentile	2,800	9,964	10,000	8,000
sample size	238	74	556	868

The information based on the composition of household wealth suggests that the value of home equity, liquidity assets, and financial securities should be taken into account when analyzing household wealth distribution. Therefore, all three types of wealth - total household wealth, financial wealth, and capital wealth are used in this analysis.

Table 1 shows the quantiles of income and wealth by the types of elderly households. Annual incomes for single female households are the same as those for single male households at the 25th percentile. However, single female households earn slightly less than single male households at the median and 75th percentile levels. Married couple households own a much higher level of total wealth than single male or single female households. At the 25th percentile, both single male and single female households hold extremely low levels of financial wealth. Moreover, capital wealth is only held by those elderly households at the upper part of the wealth distribution. The data in the table show that at least half of the households do not hold any capital wealth at all. These descriptive statistics provide some information about income and wealth distribution of elderly households, but they are not enough to reveal the income and wealth inequality among elderly households.

Table 2 reports the Lorenz curve ordinates by

Figure 2

Composition of household wealth by different types of elderly households, 1989

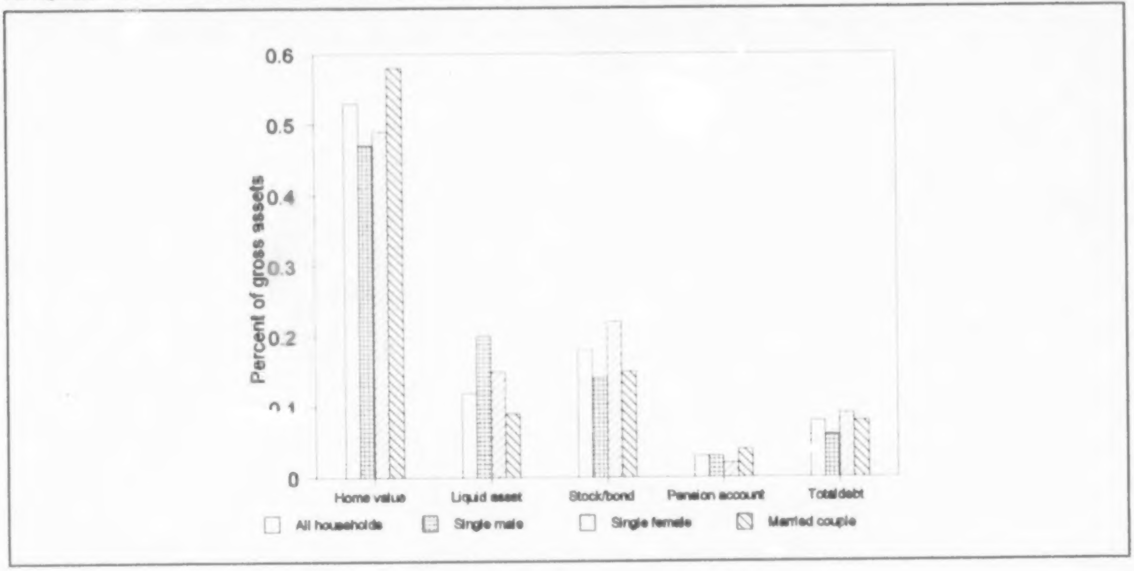


Table 2

Lorenz decile of income and wealth distribution by types of elderly households, 1989.

	Single Male	Single Female	Married Couple	All
Income				
Top quintile	0.5295	0.5442	0.7388	0.6365
2nd quintile	0.2089	0.2018	0.1010	0.1688
3rd quintile	0.1252	0.1286	0.0791	0.1044
4th quintile	0.0923	0.0854	0.0552	0.0626
bottom quintile	0.0437	0.0400	0.0259	0.0278
Household total wealth				
Top quintile	0.8706	0.7215	0.9278	0.8893
2nd quintile	0.0946	0.1751	0.0566	0.0695
3rd quintile	0.0266	0.0812	0.0419	0.0319
4th quintile	0.0068	0.0217	0.0093	0.0086
bottom quintile	0.0014	0.0005	0.0014	0.0007
Financial wealth				
Top quintile	0.8599	0.8657	0.9346	0.9087
2nd quintile	0.0802	0.1027	0.0321	0.0434
3rd quintile	0.0347	0.0233	0.0211	0.0384
4th quintile	0.0173	0.0062	0.0103	0.0073
bottom quintile	0.0079	0.0021	0.0019	0.0004
Capital wealth				
Top quintile	0.9780	0.9308	0.9886	0.9849
2nd quintile	0.0144	0.0687	0.0101	0.0136
3rd quintile	0.0037	0.0049	0.0007	0.0009
4th quintile	0.0027	0.0018	0.0005	0.0004
bottom quintile	0.0017	0.0003	0.0001	0.0002

deciles of income and wealth distributions for different types of elderly households. As indicated in column 4, the income share received by the top quintile of elderly households is 63.7%, while the share received by the lowest quintile is only 2.7%. Thus, the income share of the top quintile is almost 26 times that of the lowest quintile. In the middle of the distribution, the income share received by 60% of the households is 33.6%, which is about half that received by the top 20% of the households.

The Lorenz ordinates by deciles of wealth distribution are also shown in Table 2. The top quintile of elderly households accounts for more than 89% of household total wealth, while the lowest 20% of the households hold less than 1% of household total wealth. When comparing the distributions of financial wealth to household total wealth, the top 20% of elderly households hold 91% of all financial wealth, while the bottom quintile of households hold less than 1% of all financial wealth as well. The distribution of capital wealth shows that the top quintile of households own about 98% of household capital wealth in comparison to only 2% owned by the bottom 80% of households.

Gini coefficients of inequality among the elderly are shown in Table 3. As indicated, for all elderly households, the Gini coefficient based on household total wealth is 0.8593, which is larger than the Gini coefficient of 0.8453 based on household financial wealth. Moreover, the Gini coefficient of 0.8453 for financial wealth is larger than the one of 0.9024 for capital wealth. It is clear that the inequality based on capital wealth is much larger than that based on household total wealth or financial wealth, while the inequality based on financial wealth is larger than that based on household total wealth. This result is consistent with the study by Crystal and Shea (1990), which also found smaller Gini coefficient based on household total wealth than based on financial wealth or tangible wealth.

The top quintile of married couple households receives about three-quarters of the total income, whereas the lowest quintile of households receives only 3% of the total income. Similarly, for single male and single female households, the top quintile receives 54.8% and 53% of the total income each, while the lowest twentieth receives about 4% and 4.4% of the total income respectively. The income share received by the middle 60% of the households is about 42% for both single male and female households.

For one person households, the differences in income and wealth shares between single female and single male households at the top and bottom quintiles lead to larger Gini coefficients of income, total wealth, financial wealth, and capital wealth for single male households in comparison to single female households, as reported in Table 3. Meanwhile, the Gini coefficients of income and wealth distributions show the largest for married couple households, which suggests more unequal income and wealth distributions among married couple households than single person households.

Table 3

Gini coefficient of income and wealth of elderly households, 1990-91.

	Single Male	Single Female	Married Couple	All Households
Income	0.4546	0.4261	0.4852	0.4612
Total wealth	0.7569	0.6933	0.8867	0.8593
Financial wealth	0.7734	0.7980	0.8671	0.8453
Capital wealth	0.8851	0.8454	0.9321	0.9024

The above empirical results indicate that there may exist a positive relationship between income and wealth, since both income and wealth are most unequally distributed among married couple households but most equally distributed among single female households. Table 4 lists the results of regressing household total wealth on income and income square. As indicated, there exist significant positive relationships between wealth and income for types of households.

Table 4

The regressing of total wealth on income and income square by different types of households, 1989.

	Single Male	Single Female	Married Couple	All Households
Intercept	-229057	14498	62273	-48931
Income	25.52	6.49	12.15	11.61
Income square	-9.22E-6	2.35E-6	-1.58E	–1.50E-6
Adjusted R-square	0.7521	0.0846	0.2609	0.2704

Wealth is the accumulation of savings from the past income, and it depends on the age of the household. Older people have higher levels of wealth than younger people at a given level of income due to the fact that they have had a longer time to accumulate it. Although the relationship between income and wealth is complicated, it is quite strong (Weicher, 1994). According to the U.S. Department of Health and Human Services (1994), asset income provides 21% of total money income for the population 65 or older. The association between income and wealth may suggest that increase in income inequality causes the increase in wealth inequality, or vice versa.

Conclusion and Implications

This study explores the income and wealth distribution of elderly households. The findings suggest that household wealth is distributed much more unequally among elderly households than are household incomes. Moreover, inequality of financial wealth is higher than that of total net wealth, and capital wealth is distributed more unequally than household financial wealth. Among different types of elderly households, married couple households show the greatest inequality of wealth and income distributions, whereas wealth and income are most equally distributed among single female households.

The life cycle hypothesis assumes that the elderly dissave out of their accumulated wealth in order to maintain a constant level of consumption over their lifetime (Modigliani, 1980). This probably is the case for many elderly who have adequate holdings of private wealth augmented with Social Security and Medicare. Clearly, the economic status of those aged households will be better off. But at the same time, some elderly who have almost no wealth to access beyond government welfare support may be vulnerable to any uncertainty that may occur, such as a serious illness. Economic inequality based on household wealth does pose the question of whether the aged who have low income and low wealth would be able to pay for increased medical expenses or handle the occurrence of income loss.

The findings presented here suggest that the social welfare programs should justify their funding criteria to better improve the economic status of the elderly. For example, many government housing subsidy programs target those households at the lower end of income distribution. It is clear that economic resources include income as well as wealth; therefore, income alone may not be an appropriate measure of the ability of a household to own adequate housing in the private housing market. Therefore, it is crucial for government policies to target elderly people who are in most need of welfare transfers, especially when the government fiscal budget is tight and there is an increasing proportion of the elderly in our society.

One limitation of this study is that the SCF do not provide information regarding the value of consumer durables other than automobiles and other vehicles. Consumer durables constitute a substantial part of a lower income household's possessions, thus, data imputation from other data sources may be necessary.

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Endnotes

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Consumer Attitudes Towards Fat Contents in Food: The Case of Whole Milk vs. Lower Fat Milk

In this paper, the differences in consumer attitudes toward milkfat in fresh milk are investigated for different representative households defined on the bases of income, race, residential location, or family type. The percentages of households purchasing either fresh whole milk or other fresh milk, computing from the Consumer Expenditure Surveys, were used as proxies of the consumer attitudes and a linear trend model was derived to provide specific parameters measuring the changes in consumer attitudes. The estimation results show that the patterns of changes in consumer attitude toward milkfat differ significantly among demographic groups.

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Introduction

Due to the public's increasing concerns about fat content in food, more and more consumers are likely to purchase those food products with less fat or even that are fat free. During the last decade, the food industry has reshaped its product mix and marketing strategies in order to catch up with the changes in consumer attitudes towards fat content in food. Therefore, it is crucial for the food industry to understand the consumption patterns of those foods containing more or less fats.

Fresh milk, a traditional food in U.S. households, has experienced the same changes in consumer attitudes since the early 1970s. As one can see from Figure 1, per capita consumption of fresh whole milk (containing higher fat content, i.e., 3.25% milkfat) was declining during the period of 1970-1992, while per capita consumption for other fresh milk (containing lower fat content, i.e., 1% or 2% milkfat, or skim milk) increased steadily. The decline for fresh whole milk was a significant magnitude of 135 pounds from 219.1 pounds in 1970 to 84.1 pounds in 1992, compared to the increase of 84.4 pounds in other fresh milk from 50 pounds to 134.4 pounds during the same period. This consumption pattern provides a very interesting profile of consumer attitudes towards fat content in food. To some extent, analysis of fresh milk consumption pattern can provide some useful information for understanding the changes of consumer attitude toward fat and cholesterol.

This study focuses on the anatomy of this profile of consuming fresh whole milk vs. other fresh milk by introducing two attitude variables and three parameter indicators to capture the characteristics and differences of attitude change among different representative households. Two aggregate attitude variables are defined as the percentages of households who purchased either fresh whole milk or other fresh milk based on monthly time series data calculated from the public use tapes of the Consumer Expenditure Survey (1980-1993) from the Bureau of Labor Statistics (BLS). Three parameter indicators are defined based on a linear trend model which is used to capture the evolution of two attitude variables over time. The first indicator is growth rate or decline rate of the two attitude variables. It can be used to represent the changing pattern of consumer attitude toward fats in fresh milk. The second indicator is the intercept attitude level measured by these two percentages when they are equal. The third indicator is the cross over time when both percentages are equal. It might be used as an approximate indicator of time for awareness about fat related health risks for a specific representative household.

Furthermore, a detailed profile will be presented in this paper to compare those characteristics among different representative households, which are defined as having different income levels, races, residential locations, or family types.

The paper is arranged as follows: 1) aggregate attitudes and linear trend model; 2) data and representative households; 3) testing and estimation; 4)analysis and comparison; and 4) summary.

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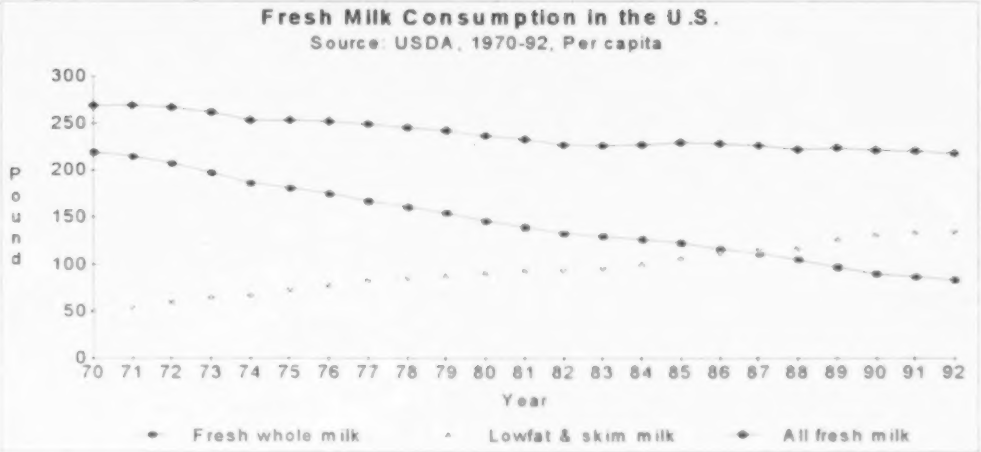
Figure 1

Per Capita Consumption of Fresh Milk in the U.S.



Aggregate Attitudes and Linear Trend Model

Aggregate Household Attitudes toward Fresh Milk

When a household purchases only fresh whole milk at a given time, the household is considered as a household which may not be concerned about the higher fat content in milk or not in need for nutritional reasons. On the other hand, when a household purchases only other fresh milk (i.e., lower fat milk) at a given time, the household is assumed to be concerned about fat content in milk.

Suppose, in time t, there are H_t households, in which h_t households purchase only fresh whole milk and l_t households purchase only other fresh milk. The aggregate household attitude toward both fresh milk at time t can be captured by the following two percentage variables:

$$r^h_t = (h_t / H_t)*100 \tag{1}$$

and

$$r^l_t = (l_t / H_t)*100 \tag{2}$$

where r^h_t is the percentage of households that purchase only fresh whole milk at time t and r^l_t is the percentage of households that purchase only other fresh milk at time t. For the purpose of aggregation, r^h_t and r^l_t can be regarded as the indicators of attitude toward fats in milk for a specific representative household in time t, if H_t is considered as the population of the specific representative household. More specifically, r^h_t is defined as the percentage of households who may not be concerned about fat content, while r^l_t refers to the percentage of households who are concerned about fat content in fresh milk.

Linear Trend Model

Because the consumption of fresh whole milk has declined steadily while the consumption for other fresh milk increased continuously, as showed in Figure 1, the long-run changes in r^h_t and r^l_t may be represented using a linear trend model if they follow a random walk pattern with a drift (i.e., having a unit root with a drift) expressed as (Harvey 1989):

$$r^h_t = r^h_{t-1} + b_h + e^h_t \tag{3}$$

and

$$r^l_t = r^l_{t-1} + b_l + e^l_t \tag{4}$$

where e^h_t and e^l_t are disturbance terms and b^h and b^l are drift parameters.

If equations (3) and (4) hold, which can be examined using the Dickey-Fuller test or Augmented Dickey-Fuller test (Cromwell et al 1994), the linear trend models for r^h_t and r^l_t can be written as:

$$r^h_t = a_h + b_h t + u^h_t \tag{5}$$

and

$$r^l_t = a_l + b_l t + u^l_t \tag{6}$$

where b_h and b_l are parameters that capture the decline rate of r^h_t and growth rate of r^l_t respectively, i.e., $b_h = d\,r^h_t/dt$ and $b_l = d\,r^l_t/dt$; a_h and a_l are parameters that capture the initial level of percentages at a starting point;

and u^h_t and u^l_t are disturbance terms that capture the effects of those random factors.

After estimating equations (5) and (6), we can obtain the regression lines of r^h_t and r^l_t with respect to time t. Setting $r^h_t = r^l_t$ which the predicted percentage of households purchasing fresh whole milk is equal to the predicted percentage of households purchasing other fresh milk, we can obtain both the estimated cross-over time, t_e, and the estimated intercept attitude level, t_e, as follows (shown in Figure 2):

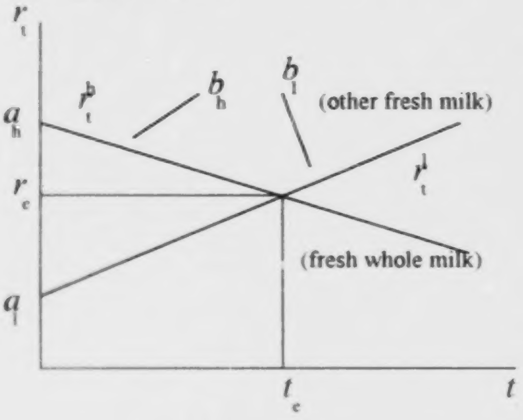
$$t_e = (a_h - a_l)/(b_l - b_h) \tag{7}$$

and

$$r_e = a_h + b_h t_e = a_l + b_l t_e \tag{8}$$

The cross-over time may be used to compare the changing patterns of consumer attitudes for fresh whole milk vs. other fresh milk among different representative households, while the intercept attitude level can be used to measure the relative market participation rate for consuming two kinds of fresh milk for a specific representative household.

Figure 2
Linear Trend Model for Percentages of Households Consuming Fresh Milk



Data and Representative Households

The data on the percentages of different representative households who purchased only fresh whole milk or other fresh milk are derived from the public use tapes of the Consumer Expenditure Survey (Diary) for 1980-1993. The survey has been conducted annually by the Bureau of Labor Statistics. Based on the status of individual household purchases for fresh milk in the monthly samples, the monthly percentages are calculated using weights provided from the Survey. Four groups of representative households are defined in this study based on income level, race, region, and household structure.

For income, there are three representative households: households with income (before taxes) in the lower one-third of the monthly sample; households with income in the middle one-third; and households with income in the upper one-third. The INGP1, INGP2, and INGP3 are used to represent these three different representative households, respectively. For the household head's race, there are two representative households: white and black households, denoted as RACE1 and RACE2, respectively. Representative households related to region are defined as follows: households in the northeast (REGN1), in the Midwest (REGN2), in the south (REGN3), and in the west (REGN4). For household structure, two representative households are considered: parents (single or couple) with at least one child under 18 years of age (FAMT1) and all other households (FAMT2). Finally, an overall representative household is defined to represent all households in the U.S. and is denoted as TOTAL.

Table 1
Representative Households in the U.S.

Households	Definition
TOTAL	All households in the U.S.
INGP1	Households with low income
INGP2	Households with middle income
INGP3	Households with high income
RACE1	Households in which heads of households are white
RACE2	Households in which heads of households are black
FAMT1	Households of parent(s) with children, at least one under 18
FAMT2	Households of all other types
	Region
REGN1	Households in northeast region
REGN2	Households in Midwest region
REGN3	Households in south region
REGN4	Households in west region

The definitions of these representative households are summarized in Table 1 and the historical trends of the two percentage variables for each representative household are displayed using twelve graphs (Figures 3). These figures show that the consumption patterns of whole milk vs. other fresh milk differ notably among different representative households during the sample period of 1980-1993.

Testing and Estimation

Testing for Unit Root

The Dickey-Fuller (DF) test and Augmented Dickey-Fuller (ADF) test are the most popular approaches to check whether a time series variable behaves in random walk or has a unit root. Based on (3) and (4), the regression equations for the DF and ADF tests can take the following forms:

$$\text{(DF)} \quad D r_t = k\, r_{t-1} + b + e_t \tag{9}$$

or

$$\text{(ADF)} \quad D r_t = k\, r_{t-1} + b + P_j(D r_{t-j}) + e_t \tag{10}$$

where $D r_t$ is the difference of r_t and $P_j(D r_{t-j})$ is the polynomial function of lags of $D r_t$. The null hypothesis that the r_t series is generated by a random walk with a drift is that H_0: $k = 0$ and it can be rejected if the *t*-ratio (absolute value) of *k* is greater than a critical value (absolute value) provided by Dickey and Fuller (1979) or MacKinnon (1991). The lag structure in (10) enables the ADF test to account for a more dynamic specification of the regression than the DF test due to possible existence of serial correlation for e_t.

Table 2

Estimated *t*-ratios of *k* in Equation (10) for Different Representative Households

Household	r^h	r^t
TOTAL	-0.755	-0.954
INGP1	-1.253	-1.376
INGP2	-0.893	-1.014
INGP3	-1.231	-1.714
RACE1	-0.891	-1.189
RACE2	-1.924	-1.913
FAMT1	-0.823	-1.805
FAMT2	-1.319	-1.184
REGN1	-1.163	-1.214
REGN2	-1.518	-3.237
REGN3	-1.114	-1.258
REGN4	-2.282	-1.828

In this paper, the ADF test with four lags is applied to the different percentage data for different representative households. Table 2 shows the *t*-ratios of *k* for all cases. As one can see, all values in the Table 2 are smaller than the critical value (-3.51) at 0.01 significant level in terms of absolute scale. Therefore, equations (5) and (6) can be used to capture the long-run trends of consumer attitudes toward whole milk vs. other fresh milk.

Estimation

The ordinal least square (OLS) method is used to estimate equations (5) and (6) using different data sets for different representative households. The results are displayed in Table 3 where all estimated parameters are statistically significant at the confidence level of 99%. Based on the estimated coefficients, the annual decline rate for households consuming fresh whole milk, the annual growth rate for households consuming other fresh milk, the crossover time, and the "intercept" consumption percentage (intercept attitude level) are calculated and shown in Table 4.

Analysis and Comparison

All Households

The decline rate of purchasing fresh whole milk is about 1.6% per year from 1980 to 1993 for all U.S. households. On the other hand, the growth rate of consuming other fresh milk for the overall representative household is about 1.3% per year. Also, it is worth noting that the decline rate is higher than the growth rate. The cross-over time for all households purchasing either fresh whole milk or other fresh milk is around August, 1984, which is about two years earlier than the previous estimates based on per capita consumption data (Jacobson 1989 and Figure 1). Part of the reason may be that a large amount of fresh whole milk were consumed away from home, e.g., consumption at schools by pupils, and these was not reflected in the Survey data.

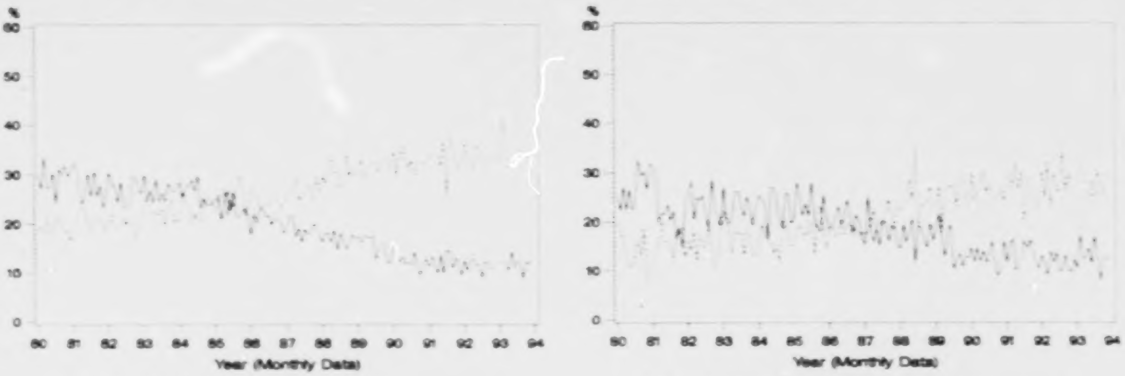
Households with Different Income

High income and middle income households have nearly the same decline rates for purchasing fresh whole milk (at 1.7%) and the same growth rate for drinking other fresh milk (at 1.4%), both of which are higher than those of low income households (1.1% and 1.2%, respectively). For low income households, the decline rate is a little bit smaller than the growth rate, a different pattern from the overall households.

The high income households have a very early cross-over time (November, 1981), compared to the cross-over time in late 1985 for low income and middle income households. This statistic may imply that high income households became accustomed to buying lower fat milk much earlier than lower income households. However, the high income households have the highest intercept percentage level (27%), compared to 24% for middle income households and 19% for low income households, indicating that higher income households consumed more fresh milk overall.

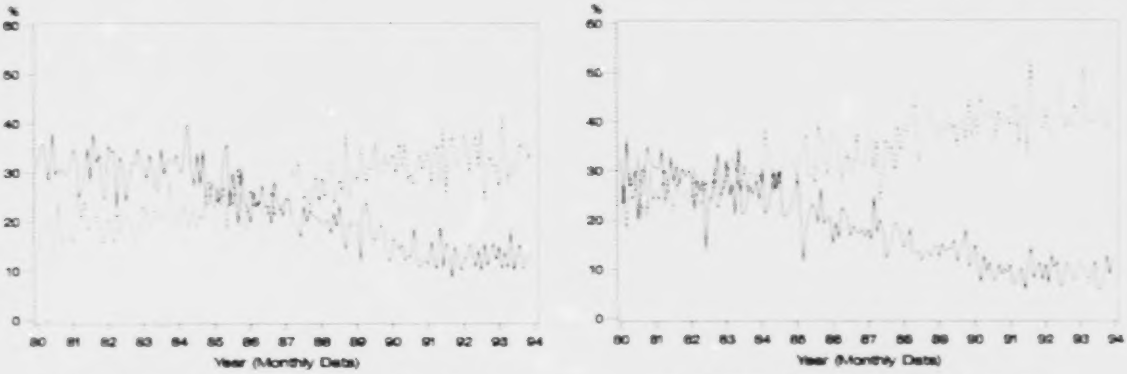
Figure 3

Percentages of Representative Households Purchasing Whole Milk vs. Other Fresh Milk



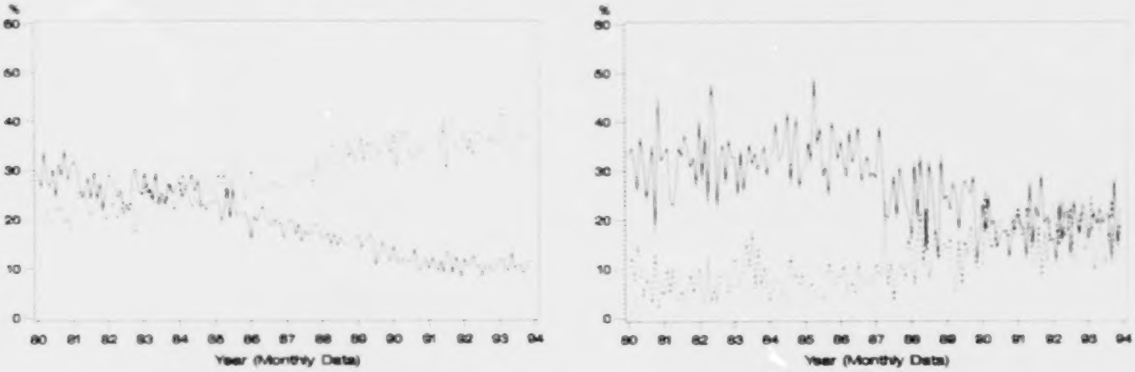
(a) 'TOTAL' Households: All Households

(b) 'INGP1' Households: Low Income



(c) 'INGP2' Households: Middle Income

(d) 'INGP3' Households: High Income



(e) 'RACE1' Households: White

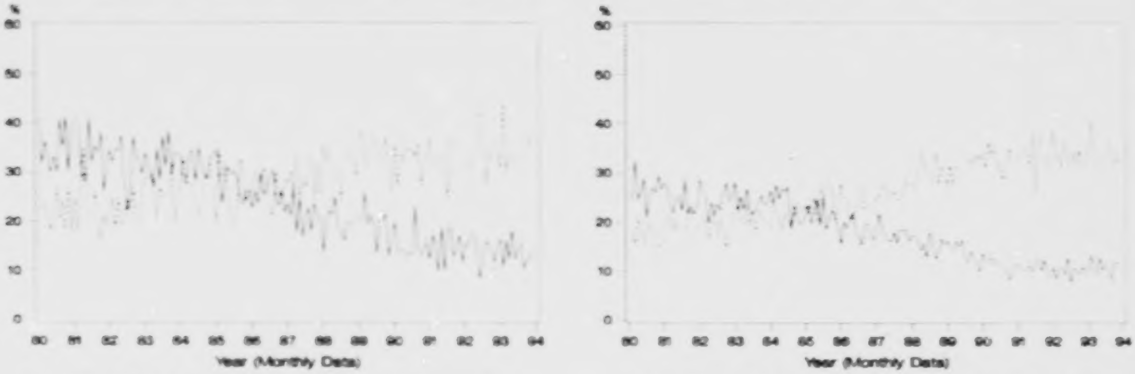
(f) 'RACE2' Households: Black

Solid Line: Fresh Whole Milk Only **Dot Line: Other Fresh Milk Only**

Note: The weighted monthly percentages are calculated based on individual household data from the 1980-1993 Consumer Expenditure Surveys (Diary).

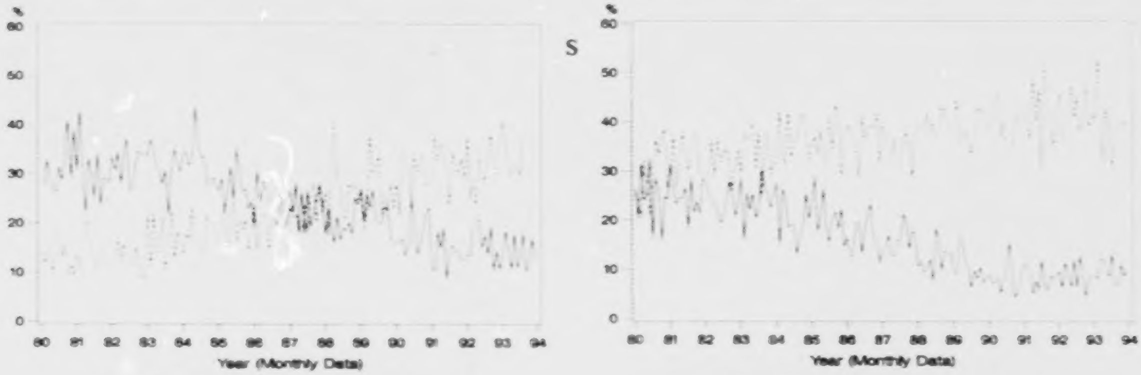
Figure 3 (continued)

Percentages of Representative Households Purchasing Whole Milk vs. Other Fresh Milk



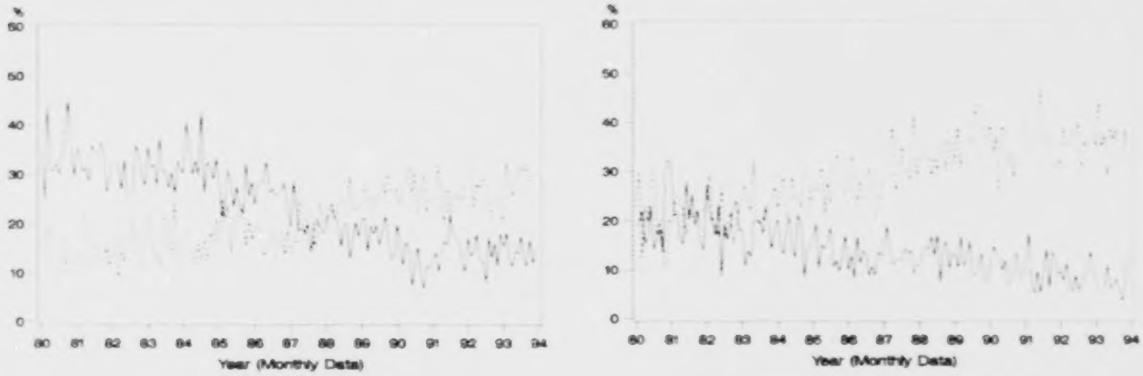
(g) 'FAMT1' Households: Parent(s) with Children

(h) 'FAMT2' Households: Without Children



(i) 'REGN1' Households: Northeast

(j) 'REGN2' Households: Midwest



(k) 'REGN3' Households: South

(l) 'REGN4' Households: West

olid Line: Fresh Whole Milk Only   Dot Line: Other Fresh Milk Only

Note: The weighted monthly percentages are calculated based on individual household data from the 1980-1993 Consumer Expenditure Surveys (Diary).

Table 3
Estimated Parameters from (5) and (6) for Various Representative Households

Household	r^h_t			r^l_t		
	a_h	b_h	R^2	a_l	b_l	R^2
TOTAL	31.07	-0.131	0.892	17.92	0.108	0.846
INGP1	26.05	-0.093	0.669	12.17	0.104	0.697
INGP2	35.23	-0.148	0.811	16.80	0.111	0.743
INGP3	30.37	-0.145	0.795	24.59	0.117	0.687
RACE1	30.36	-0.134	0.892	19.85	0.112	0.838
RACE2	36.32	-0.109	0.428	4.69	0.077	0.409
FAMT1	37.35	-0.157	0.813	21.32	0.088	0.560
FAMT2	26.79	-0.116	0.851	16.89	0.121	0.804
REGN1	35.05	-0.131	0.683	10.05	0.149	0.745
REGN2	27.10	-0.128	0.732	30.91	0.068	0.359
REGN3	36.25	-0.151	0.759	11.98	0.103	0.661
REGN4	21.01	-0.084	0.547	19.73	0.116	0.624

Table 4
Decline Rate, Growth Rate, Cross-over Time, and Intercept Percentage

Household	Decline rate (% per year)	Growth rate (% per year)	Cross-over time (Date)	Intercept percentage (%)
TOTAL	1.57	1.29	AUG 84	23.86
INGP1	1.12	1.24	NOV 85	19.49
INGP2	1.78	1.33	DEC 85	24.68
INGP3	1.74	1.41	NOV 81	27.17
RACE1	1.60	1.34	JUL 83	24.63
RACE2	1.30	0.92	MAR 94	17.78
FAMT1	1.88	1.06	JUN 85	27.11
FAMT2	1.39	1.45	JUN 83	21.94
REGN1	1.57	1.78	JUN 87	23.33
REGN2	1.54	0.82	MAY 78	29.58
REGN3	1.81	1.24	DEC 87	21.82
REGN4	1.00	1.40	JUL 80	20.47

Households with Different Races and Different Family Types

The differences and implications between white vs. black households are nearly the same as those between high income households vs. low income households. The exception is that the black households have a much lower growth rate (0.9%) for lower fat milk consumption and a much later cross-over time (around March, 1994, a predicted cross-over time)).

The households with children have a much higher decline rate for purchasing fresh whole milk (1.9%) and a much lower growth rate for consuming other fresh milk (1.0%). These patterns of change may be caused by the already high initial consumption percentage levels for both fresh whole milk (37%) and other fresh milk (21%) in 1980. Therefore, it is not surprising for these households to have a high intercept percentage level (27%). However, the cross-over time for these households is two years behind that of households without children.

Households in Different Regions

Households in different regions have different patterns of choice between fresh whole milk and other fresh milk. In the Midwest region, households have their early cross-over time in May, 1978 due to a higher initial percentage level for consuming other fresh milk. They also have the highest intercept percentage level (30%) with the lowest growth rate of 0.8%. Households in the south have the latest cross-over time (December, 1987) and a much lower intercept percentage level (21%) with the highest decline rate of 1.8%. The growth rates for households in both the northeast and west are higher than the decline rates for both, but households in the west have an earlier cross-over time (July, 1980) with a much lower decline rate (1.0%).

Summary

This study investigated the differences in consumer attitudes toward fats in fresh milk for different representative households according to different demographic profiles. The percentages purchasing either only fresh whole milk or only other fresh milk were used to approximate the attitudes. A linear trend model was derived to examine and compare the consumer attitudes for different representative households.

The major findings from the investigation are summarized below:

1) The cross-over time, in which the percentages of purchases for fresh whole milk and other fresh milk were equal, for all households in the U.S. was around August 1984. This timing was about two years earlier than previous estimates based on per capita consumption data. Also, on the average, 1.6% of all households gave up drinking fresh whole milk every year, and in the mean time, 1.3% of households began to drink other fresh milk.

2) High income households had a very early cross-over time, about four years earlier than those of low and middle income households. This pattern may imply that high income households have became aware of health risks associated with fat content in food earlier than low income households. Also, high income households had higher percentage levels for consuming both fresh whole milk and other fresh milk than did lower income households.

3) Black households had a very late predicted cross-over time (March, 1994), about ten years later than that of white households. Therefore, black households appeared to have a deferred awareness for health concerns relative to the fat content in food.

4) Households with children had higher percentage levels in consuming both fresh whole milk and other fresh milk than did households without children. Households with children had a cross-over time that lagged two years as compared to households without children.

It is noted that consumer attitudes toward fat content in fresh milk are greatly affected by health information related to fat and cholesterol provided by medical articles, media, and health professionals. Therefore, the consumption data used in this paper may be used as a revealed health information indicator about fat and cholesterol for different representative households (Chern and Zuo 1995).

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Endnote

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Consumer Interests Annual *Volume 42, 1996*

Economic and Sociodemographic Determinants of "Healthy Eating" as Measured by USDA's Healthy Eating Index

The U.S. Department of Agriculture has a strong interest in the healthfulness of Americans' total or overall diet. In order to better monitor, assess, and, if necessary, help improve the overall diet, the Department's Center for Nutrition Policy and Promotion, and other parties, recently developed an overall-diet-based Healthy Eating Index. The Index reflects compliance with the Dietary Guidelines for Americans, and the USDA/DHHS Food Guide Pyramid. Using the Healthy Eating Index and data from USDA's 1989-90 Continuing Survey of Food Intakes by Individuals, this study provides preliminary findings of the relationships between Americans' overall diet and selected economic and sociodemographic characteristics.

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Jay D. Hirschman, U.S. Department of Agriculture[2]
Eileen T. Kennedy, U.S. Department of Agriculture[3]

Introduction

People's diets are complex. Every day in the United States, individuals choose--and consume--from a staggering array of foods available to them. The USDA nutrient data bank currently contains food composition data on almost 7,000 different foods. At the same time, the importance of diet in maintaining good health is quite clear (U.S. Department of Health and Human Services, National Academy of Sciences). A good, or healthy, diet can help people live longer and healthier lives, with enhanced well-being. It also means better economic productivity and lower health care costs. Thus, the Federal Government has a strong incentive to monitor the population's diets (typically, through national food consumption surveys) and, when necessary, to help improve dietary status through food assistance, nutrition education, and other efforts.

This raises two interesting questions for nutrition educators and others concerned with assessing diets and their determinants. First, what exactly is a good or healthy diet? and second, how can a person's or a group's diet be evaluated?

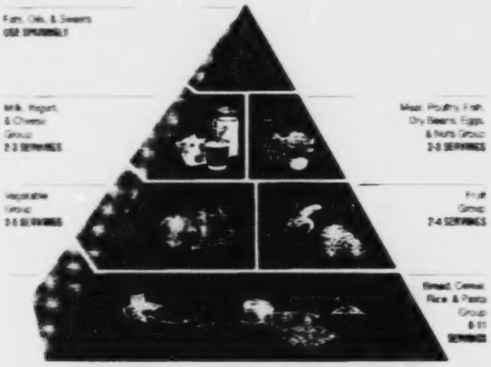
To answer the first question, since 1980 the U.S. Department of Agriculture (USDA) and the Department of Health and Human Services (DHHS) have issued principles of a healthful diet called the "Dietary Guidelines for Americans" (U.S. Department of Agriculture and U.S. Department of Health and Human Services). These Guidelines focus on obtaining a diet both sufficient in nutrients and without excesses, since excess intakes of certain food components have been linked to chronic diseases (U.S. Department of Health and Human Services, National Academy of Sciences). The current (1995) Guidelines are:

- Eat a variety of foods
- Balance the food you eat with physical activity--maintain or improve your weight
- Choose a diet with plenty of grain products, vegetables, and fruits
- Choose a diet low in fat, saturated fat, and cholesterol
- Choose a diet moderate in sugars
- Choose a diet moderate in salt and sodium
- If you drink alcoholic beverages, do so in moderation

The Dietary Guidelines do not give specific and detailed recommendations on which foods to eat every day and how much. This is done by USDA's Food Guidance System and the graphic representation of USDA's Food Guide Pyramid (FGP) (U.S. Department of Agriculture, 1992), shown in Figure 1. To come up with these specific recommendations, USDA scientists considered, among other things, the number of servings per day from major food groups and subgroups that would embody the dietary guidelines as well as possible (Welsh et al.).

The answer to the second question--how can a person's or group's diet be evaluated?--had to await the answer to the first--what is a good or healthy diet? Because a diet comprises many components, it is difficult to judge one overall. Still, those wanting to

Figure 1
The Food Guide Pyramid



relate overall diets to factors influencing those diets need a summary measure, or index, of the overall diet. Otherwise, researchers are required to consider multiple aspects of the diet, one at a time, greatly complicating inferences on determinants of the overall diet quality (e.g., Basiotis et al, 1983, 1987, Basiotis 1991, Capps and Havlicek, Haines et al., Hama and Chern, Morgan et al.).

In this study, we use guidance from theory and previous research to estimate relationships between a newly developed measure of the overall diet (see below) and selected economic and sociodemographic variables available in USDA's 1989-90 Continuing Survey of Food Intakes by Individuals (CSFII). The results, although preliminary at this point, may be of interest to nutritionists and nutrition educators, some government agencies, public health professionals, academics, and the public at large.

The Healthy Eating Index

In order to facilitate monitoring and assessment of dietary status and if necessary, help improve it through nutrition education and nutrition promotion, the USDA Center for Nutrition Policy and Promotion, in cooperation with the Department's Food and Consumer Service and private industry, has developed a state-of-the-art measure of "Healthy Eating" as defined by the Dietary Guidelines and the Food Guide Pyramid, called the Healthy Eating Index (HEI) (Kennedy et al., USDA, 1995).

Even though a limited number of indices focusing on the total diet exist (Basiotis et al. 1995, Patterson et al., Sorenson et al., Abdel-Ghany) none comes as close to measuring the healthfulness of the overall diet relative to the Dietary Guidelines as the HEI. The main reason is that practically all prior research on Diet Index construction focused exclusively on consumption of nutrients, as opposed to consumption of foods. (The exception is Patterson et al., whose work related a diet quality index to the recommendations given in the National Academy of Sciences Diet and Health Report).

The Healthy Eating Index has 10 components, which are based on different aspects of a healthful diet. For each component, individuals receive a score ranging from 0 to 10. Thus, the overall index has a range from 0 to 100. The components are defined as follows:

Components 1 through 5 measure the degree to which a person's diet conforms to the USDA FGP serving recommendations for 5 major food groups: grains, vegetables, fruits, milk, and meats; component 6 is based on overall fat consumption as a percentage of total food energy intake; component 7 is based on saturated fat consumption as a percentage of total food energy intake; component 8 is based on cholesterol intake; component 9 is based on sodium intake; and component 10 is based on the amount of variety in a person's diet.

The exact score that an individual receives in any of the food group categories is determined as a proportion of the recommended number of servings for a given energy intake level. For instance, the average energy allowance for a 40-year-old female is 2,200 kilocalories and the FGP indicates that at this energy level, 4 servings of vegetables per day are recommended. Thus, for a 40-year-old female, the number of servings to get the maximum score of 10 in the vegetable category is 4.

A person who consumed the recommended number of servings from any food group would receive a score of 10; conversely a person consuming no servings within a food group would receive a score of 0. Between 0 and 10 the score is calculated proportionately, for example, a person needing 6 servings from the grain category who consumed 3 would be given a score of 5. Food serving amounts were computed from food consumption data using factors derived from the serving size assumptions given in the USDA FGP.

Calculation of scores for the other food groups followed a similar procedure. Actual servings were compared to recommended servings based on the USDA FGP.

In each food group, when the optimum number of servings was achieved, no further credit was given for additional servings nor were any points deducted for being beyond a certain number of servings.

Components 6 to 10 were scored differently. For component 6, a score of 10 was given if a person's total fat intake as a proportion of energy intake was 30%

or less. The score declined to 0 when this proportion reached 45%. Between these two points, the scores declined proportionately.

The score for saturated fat (component 7) was computed analogously to that for total fat, with a maximum score achieved at a ratio of 10% or less of total saturated fat/energy and 0 when the ratio was 15% or greater.

The scores for cholesterol and sodium are each based on milligrams consumed. The cutoff points for a perfect score of 10 are set at 300 mg for cholesterol and 2,400 mg for sodium. The corresponding 0 points are 450 mg and 4,800 mg for cholesterol and sodium respectively. There was little indication from prior research how the limits for a 0 score for total fat, saturated fat, cholesterol, and sodium should be determined. The upper limits for setting the 0 score were based on consultation with nutrition researchers and exploration of the distributions of consumption of these component parts using USDA's 1989-90 CSFII data.

The Dietary Guidelines as well as the National Academy of Sciences Diet and Health Report stress the importance of variety in the diet. To assess variety, the HEI counted the total number of different foods eaten by an individual that contribute substantially to meeting 1 or more of the 5 food group requirements. In operationalizing this principle, foods were counted only if they were eaten in amounts sufficient to contribute at least one half a serving in any of the food groups. Identical food items eaten on separate occasions were aggregated before imposing the one-half serving cut-off.

Foods that were similar, such as two different forms of potatoes or two different forms of white bread, were counted only once in the variety category. Mixtures were broken down into their component parts, so that a single item could contribute 2 or more points to the variety index. For example, lasagna might contribute to both the grain and meat groups.

In the variety category a person was allocated a score of 10 if 16 or more different foods were eaten over the 3-day period. A score of 0 was given if 6 or fewer distinct foods were eaten over the 3-day period. Here again, little guidance was available to suggest upper or lower limits in scoring variety; similar to categories 6 to 9, the limits for variety were derived by exploration of the consumption data and consultation with researchers. For a more detailed description of the construction of the HEI, see either Kennedy et al. or USDA (1995).

Theoretical Issues and Statistical Model

Applied econometric models of demand for food or nutrients are typically guided by economic theory, usually either classical or household production theory. Choice of the appropriate theoretical framework can be very important for estimation because severe statistical biases may result if the researcher does not choose prudently. In practice, however, the researcher is often limited by the available data. This has resulted in approximately the same set of available variables being included in such models regardless of theoretical framework. (Basiotis, 1991).

A consequence of this is that, depending on choice of theoretical framework, a given available variable may be thought of as being a proxy for several unrelated and unobservable economic variables. For example, the observed variable "age" can stand as a proxy for human capital in the form of experience. It affects the demands for food in general, and a healthy diet in particular, through its effects on the household production function by which households combine market-bought foods and their own labor and time to produce "healthy diets" that in turn help produce "health" (Basiotis et al., 1987). It can also be thought of as proxy for preferences unique to cohorts. As such it would affect the demand for food and healthy diet through the utility function in either theoretical framework. Thus, interpretation of estimated coefficients will be affected by choice of theoretical framework. However, assuming that the same observable (proxy) variables are included in the analysis, the estimates themselves will not be affected by choice of theoretical framework.

These observations are relevant to the present study since the recent availability of the HEI, which embodies a host of food choice characteristics, allows for a somewhat less restrictive model specification (i.e., there is no need to simultaneously estimate demands for individual foods or nutrients.) The Ad Hoc reduced form specification employed here was guided by household production theory and previous studies of food and nutrient consumption in order to estimate net effects of the independent variables on the HEI. Thus, estimated coefficients should be interpreted accordingly. Specifically, individuals' HEI was related to household income as percent of the poverty threshold, participation in the food stamp program, and a number of sociodemographic characteristics. Estimation was by Ordinary Least Squares which, for ease of interpretation, was carried out separately for males and females. The software package used to perform the estimation was the Statistical Analysis System (SAS) version 6.10.

Data and Variables Definitions

Data from USDA's 1989-90 CSFII were used in this analysis. The CSFII collected dietary and other information on U.S. households and individuals within sample households. The dietary information (collected by a 1-day recall followed by a 2-day diary) was used to construct the HEI for all individuals in the data set who provided complete 3-day dietary data (Kennedy et al.). The data file used for this study was the same as the file used to construct the HEI, and it contained information on 7,463 individuals ages 2 to 97. In addition to the HEI, which was the dependent variable, the independent variables included in the model were: Annual household income as percent of the poverty threshold, its square and its cube; age, its square and its cube; food stamp program participation and amount of food stamps; self reported food sufficiency status; headship; geographic region and urbanization; race; ethnic origin; and tenancy status. The sample means presented were weighted by USDA- provided weights to be representative of the U.S. population. Survey weights were not used in regression estimation since many of the variables used to construct weights were used in the regression themselves (DuMouchel and Duncan).

Limitations

As in all applied econometric studies, several limitations must be borne in mind when interpreting the results reported here. To begin with, the nature of the study was exploratory. However, household production theory and past analyses on the demand for foods or nutrients guided model specification and selection of variables. Thus, the possibility of committing gross errors was reduced.

Several problems remain, however. A major limitation is that the OLS reduced form specification was used as opposed to a system of equations reflecting the usual derived demands for inputs in the household production function, the household production function itself, and the final demand for health and healthy eating. The range of the dependent variable is constructed to be between 0 and 100, which may imply the usual estimation problems with linear probability models (Fomby et al.). The sample consisted of all ages in order to capture variations in healthy eating by life cycle stage. This could result in inappropriate interpretation of estimated coefficients since, for example, young children tend to eat what is offered to them, but older children and adults tend to make more independent food choices. Because "healthy eating" is likely to be a very complex function of income and age, rather than include dummy variables or use a more complicated econometric technique, such as cubic splines, at major life cycle points, we thought it best to include age and income as cubic polynomials and let the data indicate turning points. Because we did not explicitly account for the survey's design effects on statistical hypothesis testing, we considered estimated coefficients to be different from zero by carrying out the test at the 0.01 level of statistical significance. However, estimated "prob" values near 0.01 could result in either outcome, if tested more appropriately. As several variables of potential importance in influencing "healthy eating" were not available or, perhaps, ignoring self selection to, say, the food stamp program, the results may well suffer from specification biases. On the content side, the 1989-90 CSFII was conducted before the 1990 and 1995 Dietary Guidelines for Americans and the Food Guide Pyramid were published, the Nutrition Labeling and Education Act of 1990 took effect, and the USDA increased its nutrition promotion efforts targeting food assistance program participants. Thus, there may have been a structural change in later years that would be reflected in estimated relationships from later survey data. Given the size and number of these limitations, results should be interpreted with caution. Until further confirmation, they should be considered preliminary.

Results

Estimated population means and sample regression coefficients for males and females are shown in Table 1. The means of the binary independent variables represent proportions in the population. The 2-year mean value of the HEI was 62.3 for the males and 65.5 for the females. The mean income as a percent of the poverty threshold was 372 for the males and, at 342, substantially lower for the females.

The estimated regression coefficients and their associated probvalues are given next. The effects of income and age are complicated and depend on the estimated coefficients, the level of household income, as well as the age of the individual. Marginal income and age effects as well as elasticities estimated at the mean values for income and age and the HEI were calculated. The marginal effect of income for males at the average on the HEI is 0.006 and for females, 0.008. The marginal effect of age is 0.06 for males and 0.21 for females. The income elasticity of the HEI for males is 0.037, and for females it is 0.043. Thus, if income were to increase by 10%, the HEI would increase by .37% (*not* percentage points) for males and by .43% for females. The age elasticity of the HEI is 0.03 for males and 0.11 for

Table 1

Estimated Determinants of Healthy Eating: Ordinary Least Squares Coefficients and Weighted Sample Means, CSFII 1989-90, By Sex

Variable	MALES (N=3,338) Mean	MALES (N=3,338) Coefficient	MALES (N=3,338) Probvalue	FEMALES (N=4,106) Mean	FEMALES (N=4,106) Coefficient	FEMALES (N=4,106) Probvalue
Healthy Eating Index	62.26			65.48		
Intercept		75.644911	0.0001*		72.777654	0.0001*
Income as % of poverty threshold	372.30	0.004833	0.1901	342.38	0.008918	0.0155
Income as % of poverty squared		-0.00000748	0.0715		-0.00000804	0.0598
Income as % of poverty cubed		1.40327E-9	0.2281		1.37203E-9	0.2501
Income X Age Interaction	13603.27	0.000188	0.0001*	12865.48	0.000122	0.0140
Age in years	34.20	-1.304743	0.0001*	36.29	-1.029269	0.0001*
Age in years squared		0.026735	0.0001*		0.025372	0.0001*
Age in years cubed		-0.000151	0.0001*		-0.000164	0.0001*
Food stamps: value	10.44	0.006015	0.2842	13.96	0.006140	0.1456
Household participates in FSP	0.06	-2.581720	0.0342	0.08	-1.346021	0.1365
Enough food but not the kind we want	0.21	-0.609253	0.1977	0.19	-1.311430	0.0027*
Often or always not enough food	0.03	-3.488648	0.0003*	0.02	-2.683166	0.0034*
African American	0.11	-0.290403	0.6798	0.12	-2.564748	0.0001*
Asian American	0.01	7.076303	0.0001*	0.01	5.800087	0.0004*
Other race	0.03	-1.216316	0.2676	0.03	-1.488746	0.1438
Hispanic ethnic origin	0.08	1.178308	0.1235	0.07	1.482980	0.0323
Household in Midwestern region	0.25	-0.908211	0.1439	0.23	-1.906544	0.0010*
Household in Southern region	0.34	-1.972224	0.0009*	0.35	-2.377510	0.0001*
Household in Western region	0.21	1.496223	0.0191	0.19	-1.093474	0.0638
Household in the suburbs	0.48	-0.286584	0.5536	0.46	-0.055282	0.9005
Household in a nonmetro area	0.23	-1.335222	0.0152	0.22	0.125743	0.8024
Household rents dwelling	0.30	-0.506630	0.3150	0.31	-0.489652	0.2817
Occupies dwelling w/o payment	0.02	1.832123	0.1712	0.01	-0.761558	0.5636
Female head only	0.06	-1.146687	0.1253	0.28	0.208381	0.6444
Male head only	0.18	-0.549283	0.3801	0.01	-0.335309	0.9085
		Adjusted R^2=0.17			Adjusted R^2=0.14	

* Statistically Significant at the .01 Level

Figure 2

Estimated Age Effects on HEI at Four Income Levels as a Percent of Poverty Threshold: Males

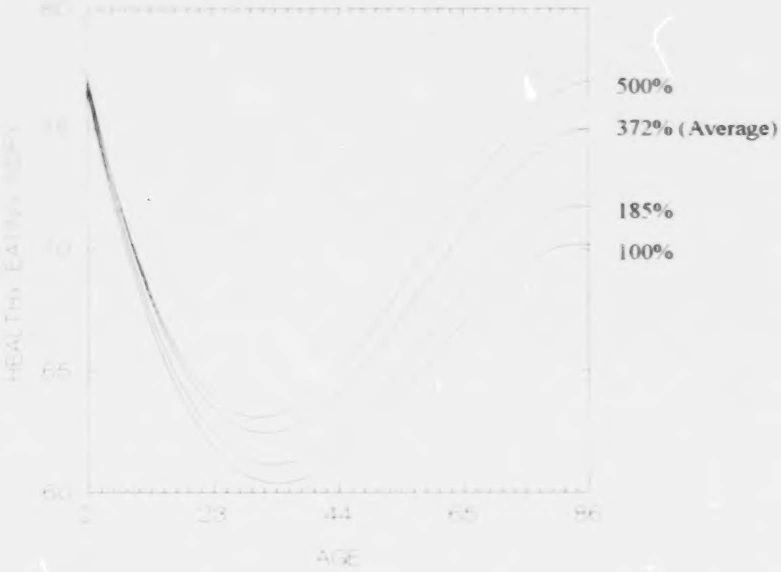
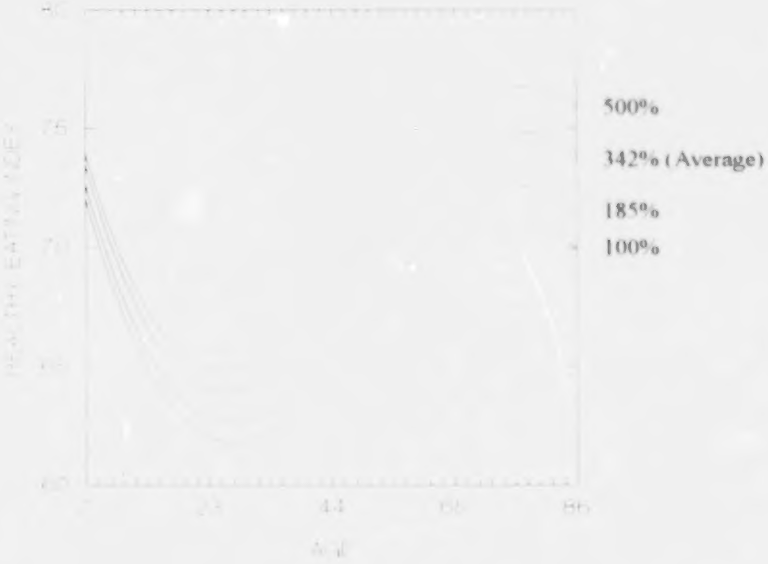


Figure 3

Estimated Age Effects on HEI at Four Income Levels as a Percent of Poverty Threshold: Females



females. Thus, females are estimated to improve their diets faster than males as they grow older. These small but positive income and age effects on the HEI are in agreement with previous findings (Morgan). Note that although the estimated coefficients of age as well as those of the interaction term are highly significant, the income coefficients for the most part are not. These findings regarding income and age are further elucidated in Figures 2 and 3. There, it can be seen that younger individuals have higher scores, for given levels of household income (and at mean values for all other variables), and that these scores decline with age. At average household income levels (372% of poverty for males and 342% of poverty for females) the HEI score reaches a minimum at about age 31 years for males and 26 years for females. It then increases steadily with age.

Starting with the 1977-78 Nationwide Food Consumption Survey, the USDA includes a food sufficiency question in its surveys. With minor wording variations from survey to survey, this question asks household respondents to classify their food supply according to: "enough and the kinds of food we want to eat," "enough but not always the kinds of food we want to eat," "sometimes not enough food to eat," and "often not enough food to eat." The last two options were coded together in this study, while the first was the omitted category. For both sexes, those whose household respondent said "enough but not always the kind of food we want to eat" tended to have lower levels of the HEI, even though the estimated effect was significant only for the females. For both sexes, answering "sometimes not enough to eat" or "often not enough to eat" was associated significantly and substantially with lower HEI average scores. These findings are consistent with the concept of the Food Sufficiency Curve illustrated by Basiotis (1992), where he hypothesized that as economic resources dwindle, household members gradually economize by first eating less nutritious food, and then by eating less food.

Race had mixed effects on HEI scores. African American women had substantially lower scores, on average, than their White counterparts, other things equal. Both male and female Asian Americans had substantially higher HEI scores, on average. "Other" races did not differ significantly from their White counterparts, other things being equal. Hispanic origin was statistically insignificant.

Compared with residents of the Eastern United States, female residents of the Midwestern region, and male and female residents of the Southern region had lower HEI scores, on average. Urbanization status did not seem to be significantly associated with the HEI. This finding is in general agreement with those of previous studies (Morgan).

Tenancy and household headship had no statistically significant association with the HEI.

Summary and Conclusions

A preliminary model relating a previously published measure of "healthy eating," USDA's Healthy Eating Index, was related through OLS regression analysis to a number of economic and sociodemographic variables available in USDA's 1989-90 Continuing Survey of Food Intakes by Individuals. As is typical of such studies, selection of independent variables is heavily influenced by their availability. The interpretation of their estimated coefficients can vary substantially depending on the theoretical model the researcher believes is most appropriate for the task at hand. We were broadly guided by the well known household production theory and past research in selection of variables.

A novel contribution to the literature is that the dependent variable reflects individuals' overall or total diet. Further, it is a measure of the healthfulness of the overall diet, since healthy eating was defined as complying with the Dietary Guidelines and the Food Guide Pyramid.

Results tended to be in general agreement with previous studies of diets that were based on components of the total diet, mostly nutrient intakes. There were some new findings, however. A statistically strong U-shaped relationship between individuals' age and their HEI score was demonstrated. This relationship varied with household income. Asian Americans, on average, had much higher HEI scores than non-Asians, other things equal. This could be explained by the fact that most previous studies collapsed the "Aleut, Eskimo, American Indian" and "Other" categories with the "Asian/Pacific Islander" category.

These results can help in focusing dietary monitoring, assessment, and if necessary, food assistance and nutrition education and promotion activities on segments of the population who may be most in need. Based on this study, such individuals would be: Younger or middle age, lower income, living in the South, and reporting not enough to eat. In addition, African American females living in the Midwest or the South who share the above characteristics were estimated to have even lower HEI scores than those above.

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Analysis of Consumer Demand for Fresh Fruits and Vegetables in the United States

Price and expenditure elasticities at retail level for 11 fresh fruits and 10 fresh vegetables were estimated by employing a composite demand system approach and using annual data. Most fresh fruits and vegetables were found to respond significantly to changes in their own prices but insignificantly to changes in expenditures. The study partially incorporated the interdependent demand relationships between fresh fruits (vegetables) and all other commodities, yet effectively avoided the problems of insufficient degrees of freedom.

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Per capita annual consumption of fresh fruits and vegetables (excluding fresh potatoes) in the United States reached an average of 114 and 103 pounds during 1991-93, an increase of 21.3% and 30.4%, respectively, over the period of 1970-72 (*Food Consumption, Price, and Expenditures*, USDA, 1994a). The rise, however, was not uniform among fresh fruits or vegetables. The overall increase in fresh fruit consumption was due entirely to sharp increases in consumption of fresh noncitrus fruits and melons, while the overall gains in fresh vegetable consumption were mainly due to increased consumption of onions, bell peppers, tomatoes, cucumbers, carrots, broccoli and head lettuce.

Among other factors, own price, prices of closely related products and per capita income have long been regarded as major determinants of demand for a commodity. Knowledge of price and income elasticities for fresh fruits and vegetables is thus very useful to both producers and researchers. For instance, price elasticity estimates are sometimes used to derive demand functions for given products. The lack of good estimates for price elasticities for fresh vegetables has caused researchers to make rather strong assumptions about such values (e.g., Epperson and Lei, 1989; and Chien and Epperson, 1990).

In spite of the long recognition of the interdependence among food commodities of similar tastes and uses, most early U.S. fresh fruit and vegetable demand studies involved only one or a small number of products, as indicated in two reviews by Nuckton (1978, 1980). Price and Mittelhammer (1979) estimated demand elasticities at the farm level for 14 fresh fruits by mixed two-stage least squares incorporating available prior information, but not within the framework of a complete demand system. Two early works, Brandow (1961) and George and King (1971), involved the estimation of matrices of demand elasticities for a large number of agricultural commodities by using a synthetic method. However, there were only three fresh fruits and six fresh vegetables included in George and King's (1971) study, and Brandow's (1961) matrix had even less detail.

One practical problem in directly estimating a complete large-scale demand system is insufficiency of degrees of freedom. In George and King's (1971) classic study, all foods were classified into 16 separable groups and the demand equation for a single commodity within a group was specified as a function of prices of all commodities within the group, price indices for other groups, and income. This procedure may not be very effective in overcoming the problem of insufficient degrees of freedom if the number of commodity groups classified is large and individual groups consist of a great number of individual commodities. In George and King's (1971) study, some cross-price elasticities within each food group were not estimated directly. In addition, cross-price elasticities showing the effect of individual commodity prices on the commodities outside the group were generated by applying the homogeneity and symmetry conditions. The results of this procedure are affected by the ordering of the food categories in the demand matrix. By carrying out sequential estimations, however, Huang (1985, 1993) estimated the complete demand elasticity matrix directly, and therefore provided a partial, but empirically feasible solution to the above problem.

The purpose of this study is to estimate directly the U.S. demand for fresh fruits and vegetables at the retail level for the period 1960-93. Specifically, this study estimates demand elasticity matrixes for 11 fresh fruits and 10 fresh vegetables, which represents a significant expansion in the availability of demand estimates for individual produce items at the retail level and provides updated demand estimates based on the most recently available data. The empirical estimation procedures, as proposed by Huang (1985, 1993), follow two sequential steps. First, a proposed aggregate demand system consisting of 11 food groups and a nonfood sector was estimated. The price effects of commodity groups other than fresh fruits (vegetables) were then excluded in the estimation of the demand coefficients for individual fresh fruits (vegetables) within respective demand subsystems. Therefore, the possible interdependent demand relationships between fresh fruits (vegetables) and other commodity groups were partially isolated in the estimation, yet without causing the problem of insufficient degrees of freedom.

Methodology and Estimation Procedures

Let the demand system derived from a consumer's utility maximization be:

$$q_i = f_i(p, m), \quad i = 1, 2, \ldots, n. \tag{1}$$

Where, n is the number of commodities consumed, q_i the quantity demanded for commodity i, p an n-coordinate vector of the prices, and m the consumer expenditure. By taking the total differential of (1), one obtains:

$$dq_i = \Sigma_{j=1}^{n} (\partial q_i / \partial p_j)\, dp_j + (\partial q_i / \partial m)\, dm, \quad i = 1, 2, \ldots, n. \tag{2}$$

Dividing both sides of (2) by q_i and expressing the price slopes in terms of elasticities, one obtains the following differential-form demand system:

$$dq_i / q_i = \Sigma_{j=1}^{n} \eta_{ij} (dp_j / p_j) + \epsilon_i (dm / m), \quad i = 1, 2, \ldots, n. \tag{3}$$

Where $\eta_{ij} = (\partial q_i / \partial p_j)(p_j / q_i)$ is a price elasticity of the ith commodity with respect to a price change of the jth commodity, and $\epsilon_i = (\partial q_i / \partial m)(m / q_i)$ is the expenditure elasticity of the ith commodity. Empirically, the derivatives in (3) are approximated by the relative changes in commodities' quantity and price and per capita expenditure, respectively, and equation (3) is thus expressed as:

$$q_i' = \Sigma_{j=1}^{n} \eta_{ij} p_j' + \epsilon_i m', \quad i = 1, 2, \ldots, n. \tag{4}$$

For time-series data, variables q_i', p_j' and m' are defined as the first-order differences $(q_{i,t} - q_{i,t-1}) / q_{i,t-1}$, $(p_{j,t} - p_{j,t-1}) / p_{j,t-1}$ and $(m_t - m_{t-1}) / m_{t-1}$, respectively.

To ensure theoretical consistency with classical demand theory, the following parametric constraints are imposed on the demand system (4):

Engel aggregation: $\Sigma_{i=1}^{n} w_i \epsilon_i = 1$; (5)

Homogeneity: $\Sigma_{j=1}^{n} \eta_{ij} + \epsilon_i = 0, \quad i = 1, 2, \ldots, n$; (6)

Symmetry: $\eta_{ij} / w_j + \epsilon_i = \eta_{ji} / w_i + \epsilon_j, \quad i, j = 1, 2, \ldots, n.$ (7)

Where w_i (i=1,...,n) is a fixed expenditure weight of the ith commodity at the selected base period. Note that the Engel aggregation and symmetry restrictions are only enforced locally at the point where the selected fixed expenditure weights refer. While there are other demand models such as the Rotterdam and the almost ideal demand system (AIDS), for which global enforcement of the neoclassical restrictions can be accomplished, an advantage of using demand system (4) is that its dependent variables, defined as relative changes of quantities demanded, can be easily quantified by using available time series data expressed as index numbers. In addition, one can directly interpret demand parameters in model (4) as elasticities.

Incorporating restrictions (5)-(7) reduces the total demand parameters to be estimated in the demand system (4) from n(n+2) to [n(n+3)/2-1] (including n constants), which is still intractable if n is large. To overcome the problem of degrees of freedom, George and King (1971) modeled consumer choices in a two-stage maximization process. Suppose that n commodities consumed belong to G separable groups. In the first stage, the total expenditure m is allocated among the G commodity groups such that the utility is maximized. The expenditure allocated for a particular commodity group m_I (I=1,...,G) is expressed as a function of the group price indexes and the total expenditure. In the second stage, each group expenditure is split into individual commodity expenditures such that the utility generated from each commodity group is maximized. A demand equation for the jth commodity belonging to group I is then expressed as

$$q_j^I = q_j^I \left[p_1^I, p_2^I, \ldots, p_{n_I}^I, m_I(P_1, P_2, \ldots, P_G, m)\right] \qquad (8)$$

or simply,

$$q_j^I = q_j^I (p_1^I, p_2^I, \ldots, p_{n_I}^I, P_1, P_2, \ldots, P_G, m), \qquad (9)$$
$$j = 1, \ldots, n_I;\ I = 1, \ldots, G.$$

where p_j^I (j=1,...,n$_I$) represents the price of the jth commodity in the Ith group, P_I (I=1,...,G) stands for the price index of commodity group I, and $n_1+\ldots+n_G=n$. The first difference form of (9) for each commodity, similar to (4), is estimated by single-equation regression. Evidently, George and King's (1971) procedure overcomes the problem of insufficient degrees of freedom and makes the estimation feasible. However, this procedure is not sufficient if the number of commodity groups (G) and the number of single commodities in an individual group (n_I) are relatively large.

Huang (1985, 1993) conducted a sequential estimation procedure in another manner to overcome the problem of degrees of freedom in the direct estimation of a large-scale demand system. In the first step, all commodities consumed are partitioned into G-1 food groups and a composite nonfood sector. Thus, the demand system (4) is re-specified as:

$$Q_I' = \Sigma_{J=1}^{G} \mathrm{H}_{IJ} P_J' + \mathrm{E}_I m', \qquad (10)$$
$$I = 1, 2, \ldots, G.$$

Where Q_I' and P_J' are, respectively, relative changes in aggregate quantity and price for commodity groups I and J, which are usually expressed as the Laspeyres quantity index and the consumer price index. Various parameters **H** and **E** represent corresponding direct- and cross-price and expenditure elasticities of the aggregate commodity groups. The aggregate demand system (10) is estimated directly while incorporating the parameter restrictions (5)-(7).

In the second step, the demand parameters within each food group are estimated group by group, using the aggregate parameter estimates obtained from (10) as information to represent approximately the price effects outside the food group under estimation. The demand subsystem for a food group, say group I, is defined as:

$$\tilde{q}_i' = \sum_{j \in I} \eta_{ij} p_j' + \epsilon_i m', \qquad i \in I \qquad (11)$$

where $\tilde{q}_i' = q_i' - \Sigma_{J=1}^{G} \mathrm{H}_{IJ} P_J'$ for $J \neq I$. The dependent variable $\tilde{q}_i'$ is the adjusted quantity (in difference-form) for the ith commodity belonging to group I and is obtained by subtracting the price effects of those food and nonfood prices outside the group from q_i'. In estimating the within-group demand subsystem (11), the symmetry condition (7) is imposed.

Data Sources

The basic data used in this study were the time series data of quantities and retail prices of individual fresh fruits and vegetables, quantity and price indexes for food groups and the nonfood sector, and per capita total expenditure. Annual data covering 1960-93 for 11 food categories, 1 nonfood sector, 11 fresh fruits and 10 fresh vegetables were obtained. George and King (1971) used proportionality factors, developed by DeJanvry (1966), to group food commodities. However, in order to calculate proportionality factors, one needs information on income elasticities and budget shares for all individual food commodities. For simplicity, the breakdown of food groups in this study was based on data availability. The 11 food categories used correspond to the major food groups published in various issues of *Food Consumption, Prices, and Expenditures* (USDA, 1994a) and are very similar to the classifications in Huang (1993) and Huang and Haidacher (1983): (1) red meats, poultry and fish, (2) eggs, (3) dairy products, (4) fats and oils, (5) caloric sweeteners, (6) flour and cereal products, (7) fresh fruits (including melons), (8) fresh vegetables (including fresh potatoes), (9) processed fruits, (10) processed vegetables, (11) other foods. The food category and nonfood price indexes were obtained from the *CPI Detailed Report* by the U.S. Department of Labor (1994)[4]. The quantity indexes for each food group were collected from various issues of *Food Consumption, Prices, and Expenditures* (USDA, 1994a)[4]. Per capita total expenditure was calculated by dividing the personal consumption expenditures (obtained from the U.S. Department of Commerce, 1994)[4] by the midyear U.S. civilian population. The quantity index for the nonfood composite sector was derived by dividing the current value of per capita expenditure on nonfood by the CPI of all items less food.

The fresh fruit subsystem estimated consisted of apples, bananas, cherries, grapefruits, grapes, lemons, oranges, peaches, pears, strawberries and watermelon. The fresh vegetable subsystem included asparagus, cabbage, carrots, celery, cucumbers, lettuce, onions, peppers, potatoes and tomatoes. The data on per capita consumption and retail prices (or price indexes) for individual fresh fruits and vegetables were collected from *Food Consumption, Prices, and Expenditures* (USDA, 1994a), *U.S. Fresh Market Vegetable Statistics, 1949-80* (Pearrow and Davis, 1982), *Fruits and Tree Nuts* (USDA, 1994b), and *Vegetables and Specialties* (USDA, 1994c). No retail prices (or price indexes) were reported for cabbage, carrots, celery and onions in 1979, for grapes, grapefruits, lemons and strawberries in 1978-79, and for cucumber and peppers in 1960-62 and 1979. For asparagus, cherries, watermelon, and pears and peaches, the data on retail prices were only available in years 1963-78, 80-91, 53-77, and 80-93, respectively. The missing data were estimated from a set of price linkage equations between retail price and grower price and the CPI of food, which generated quite reasonable predictions. The quantity data used for estimating the demand systems were defined as the retail-weight equivalents of civilian food disappearance. As all food is not sold through retail foodstores, it should be pointed out that the price and quantity data series may not correspond exactly. However, it was the best one can achieve, given the limited availability of data sources.

The remaining data needed were the fixed expenditure weights for each of the 12 commodity groups and for those individual fresh fruits and vegetables used to impose parametric constraints. The expenditure weights between food and nonfood groups were calculated from the personal consumption expenditures reported by the U.S. Department of Commerce, and the averages over the period of 1960-1993 were used. As in Huang (1993), the expenditure weight for total food was then allocated proportionally to each food group in accordance with its value in 1967-69, as reported in Table 3 of the 1979 issue of *Food Consumption, Prices, and Expenditures* (USDA, 1994a). Although shares of expenditures on some food groups have changed differently over time, the expenditure weights of 1967-69 are the only available complete data. Finally, the average expenditure share of each fresh fruit (vegetable) as a percentage of the considered fresh fruit (vegetable) group over the period of 1960-1993 was calculated by using the available quantity and price data as described above. The expenditure weight obtained for the fresh fruit (vegetable) group with respect to the total per capita expenditure in the second step was then further allocated proportionally to each single fresh fruit (vegetable) in accordance with the estimated average expenditure shares.

Empirical Results

The demand systems of (10) and (11) were estimated in two sequential steps. In the first step, the aggregate demand system (10) was estimated incorporating the Engel aggregation, homogeneity and symmetry conditions. All direct-price elasticities except for the flour and cereal products group are negative as expected (Table 1). Nine of 12 coefficients are different from zero at a significance level of 5% or better. The positive estimate of the direct-price elasticity for the flour and cereal products group is not statistically significant. The magnitudes of the (negative) direct-price elasticities range from -0.0288 for fresh vegetables to -0.987 for nonfood commodities. The expenditure elasticities for all food groups are less than 1. Six of 12 coefficients differ from zero at a significance level of 10% or better. The negative expenditure elasticities obtained for the eggs, flour and cereal products, and fresh fruits food groups do not necessarily imply that they are inferior goods since the estimates are statistically insignificant.

The aggregate parameter estimates obtained in the first step were used to estimate the fresh fruit and vegetable demand subsystems. The quantity variable in the fresh fruit (vegetable) demand subsystem was adjusted by subtracting the price effects of all other food groups and the nonfood sector outside the fresh fruit (vegetable) group in estimation, which are represented approximately by the aggregate cross-price parameters of the aggregate demand equation for fresh fruit (vegetable) group. Equation (11) was estimated while imposing the symmetry condition. Nine of 11 estimated own-price elasticities for fresh fruits are negative (exceptions are cherries and pears), and among them 8 coefficients are significant statistically at a level of 10% or better (Table 2). Except grapes and oranges, all estimated own-price elasticities are less than unity. Most estimated expenditure elasticities for fresh fruits are positive with the exceptions of apples, cherries, grapefruit and strawberries, but none of them are statistically significant.

All estimated own-price elasticities for freshvegetables are negative except cabbage (Table 3). Except those for celery and lettuce, all estimated own-price elasticities are significant at a level of 5% or better.

Table 1
Demand Elasticities for Food Groups and Nonfood

	Price												
Commodities	Meats	Eggs	Dairy	Fats	Sweeten	Flour	F.fruit	F.veg	P.fruit	P.veg	O.food	N.food	Exp
Meats	-.3816 (5.83)	.0096 (1.14)	-.0010 (0.03)	.0161 (1.50)	-.0044 (0.35)	-.0036 (0.13)	-.0077 (0.36)	-.0294 (1.39)	.0089 (0.66)	-.0077 (0.57)	-.0206 (0.89)	-.0838 (0.69)	.5053 (3.68)
Eggs	.1154 (1.70)	-.1173 (4.12)	.0100 (0.12)	-.0112 (0.37)	-.0584 (2.00)	-.0612 (0.77)	-.0207 (0.48)	.0547 (1.20)	.0102 (0.36)	.0930 (2.49)	.0036 (0.12)	.0952 (0.72)	-.1134 (0.86)
Dairy	.0077 (0.10)	-.0012 (0.05)	-.2476 (2.09)	-.0601 (1.82)	.0163 (0.52)	.1094 (1.27)	-.0387 (0.90)	-.0322 (0.70)	-.0417 (1.43)	.0334 (0.74)	-.0018 (0.05)	-.0968 (0.60)	.3535 (2.32)
Fats	.1500 (1.55)	-.0163 (0.49)	-.2514 (1.82)	-.1697 (2.03)	.1228 (2.27)	-.2102 (1.20)	-.0421 (0.66)	-.1737 (2.59)	-.0331 (0.73)	.1268 (1.76)	-.0328 (0.69)	.1669 (0.80)	.3629 (1.85)
Sweeten	.0135 (0.27)	-.0293 (2.06)	.0392 (0.67)	.0555 (2.35)	-.1524 (4.90)	-.1324 (1.90)	.0157 (0.54)	.0547 (1.86)	.0339 (1.67)	.0524 (1.85)	.0152 (0.63)	-.0035 (0.03)	.0375 (0.33)
Flour	.0331 (0.33)	-.0256 (0.75)	.1936 (1.38)	-.0772 (1.13)	-.1143 (1.85)	.3121 (1.39)	.0422 (0.65)	.0192 (0.29)	.0390 (0.86)	-.1172 (1.50)	-.0003 (0.01)	-.1064 (0.49)	-.1981 (1.02)
F.fruit	-.0160 (0.10)	-.0191 (0.48)	-.1210 (0.80)	-.0318 (0.60)	.0333 (0.61)	.0904 (0.64)	-.2730 (2.24)	.1536 (1.62)	.0234 (0.39)	.0630 (0.90)	.0105 (0.14)	.2185 (0.68)	-.1317 (0.41)
F.veg	-.1563 (1.18)	.0400 (1.15)	-.0871 (0.66)	-.1190 (2.59)	.0857 (1.86)	-.0278 (0.24)	.1243 (1.59)	-.0288 (0.26)	-.0983 (1.97)	.0542 (0.97)	-.0652 (1.03)	.0705 (0.26)	.1520 (0.55)
P.fruit	.1085 (0.73)	.0105 (0.27)	-.2106 (1.41)	-.0398 (0.73)	.0912 (1.62)	.1137 (0.81)	.0302 (0.35)	-.1742 (1.97)	-.2900 (3.70)	-.1715 (2.53)	.0805 (1.12)	.1614 (0.50)	.2900 (0.90)
P.veg	-.0398 (0.46)	.0700 (2.37)	.0992 (0.73)	.0907 (1.77)	.0810 (1.75)	-.2276 (1.58)	.0493 (0.83)	.0536 (0.92)	-.1011 (2.54)	-.1091 (1.25)	-.0644 (1.65)	-.2734 (1.52)	.3718 (2.28)
O.food	-.0881 (0.96)	-.0044 (0.30)	-.0122 (0.20)	-.0164 (0.79)	.0051 (0.22)	-.0163 (0.32)	-.0013 (0.03)	-.0464 (1.17)	.0268 (1.06)	-.0422 (1.80)	-.2959 (4.79)	-.1518 (0.70)	.6431 (2.72)
N.food	-.0496 (8.13)	-.0095 (9.34)	-.0288 (6.26)	-.0044 (3.10)	-.0193 (12.0)	-.0285 (7.57)	-.0090 (3.73)	-.0099 (3.86)	-.0041 (2.55)	-.0117 (6.71)	-.0121 (4.18)	-.9873 (62.9)	1.174 (74.7)
Weights	.06432	.00814	.03060	.00733	.01693	.01894	.00872	.01056	.00601	.01024	.01672	.8015	

Note: 1) Numbers in parentheses are t-ratios; 2) Some notations are Meats (red meat, poultry, fish and eggs), Fats (fats & oils), Sweeten (caloric sweeteners), Flour (flour and cereal products), F.fruit (fresh fruits), F.veg (fresh vegetables), P.fruit (processed fruits), P.veg (processed vegetables), O.food (other foods), N.food (nonfood), Exp (Expenditures), Weights (expenditure weights).

The magnitudes for negative own-price elasticities range from -0.0115 for lettuce to -0.650 for asparagus. The expenditure elasticities obtained from this study are all positive and less than 1, but only those estimates for celery and tomatoes are statistically significant ($p < .10$).

The elasticity estimates and their statistics from this study are quite similar to those of Huang's study (1993), yet about twice the number of fresh produce items were included in this study. In general, fresh fruits and vegetables were found to respond significantly to changes in their own prices, but not to changes in income, implying that price was a more important factor than income in determining U.S. fresh fruits and vegetable demand.

To determine if the employed sequential estimation procedure performs better than some of the other alternative estimation approaches, model (9) expressed in first-difference form was used to estimate the fresh fruit (vegetable) demand system. Since the price indexes of 12 commodity groups were included as independent variables in (9), the degrees of freedom dropped considerably, and multicollinearity was more likely to occur. As a result, parameter estimates obtained while imposing the symmetry restriction on the cross-price coefficients for individual fresh fruits (vegetables) were much less significant than those obtained from the sequential estimation procedure. Indeed, George and King (1971) omitted a number of price indexes in their estimation by single-equation regression. However, such does not apply to a joint estimation of a demand system. Instead of classifying commodities, other than fresh fruits (vegetables), into a number of separable groups, one can also assume that all the other commodities have the same impacts on fresh fruit (vegetable) consumption and therefore treat them as one single non-fresh-fruit (vegetable) group. The fresh fruit (vegetable) demand system established in this manner was also estimated with the restrictions of (5)-(7)

Table 2

Demand Elasticities for Selected Fresh Fruits

	Price											
Fruits	Apples	Bananas	Cherries	Gfruit	Grapes	Lemons	Oranges	Peaches	Pears	Sberries	Wmelon	Exp
Apples	-.1962	.0735	-.0264	-.0357	.1682	-.0157	.0567	.1187	-.0516	.0863	.0354	-.1482
	(1.31)	(0.96)	(1.30)	(0.67)	(2.30)	(0.50)	(0.73)	(2.19)	(1.15)	(2.53)	(0.70)	(0.21)
Bananas	1050	-.3341	.0243	.0446	-.0643	-.1181	-.0018	.1120	.0018	-.1270	-.1735	.6251
	(0.95)	(1.90)	(1.16)	(0.56)	(0.65)	(1.95)	(0.02)	(1.36)	(0.02)	(2.06)	(2.07)	(1.27)
Cherries	-.5661	.3645	.0911	-.0865	-.0430	-.1679	-.1540	.1751	.0817	-.2266	.3734	-1.931
	(1.29)	(1.17)	(0.80)	(0.40)	(0.14)	(1.35)	(0.50)	(0.75)	(0.43)	(1.64)	(1.78)	(0.74)
Grapefruit	-.1317	.1146	-.0150	-.8856	.2595	.0052	.2701	.0513	.0273	.0381	-.1249	-.1586
	(0.67)	(0.57)	(0.40)	(4.92)	(1.56)	(0.06)	(1.89)	(0.40)	(0.22)	(0.40)	(0.94)	(0.16)
Grapes	4239	-.1126	-.0053	.1775	-1.034	-.0781	-.2903	.2023	-.0735	-.0109	.1612	.7397
	(2.29)	(0.65)	(0.15)	(1.56)	(4.90)	(1.03)	(2.17)	(1.75)	(0.68)	(0.14)	(1.37)	(0.83)
Lemons	-.0950	-.4889	-.0469	0081	-.1850	-.3695	.0834	.3812	-.0940	-.2570	.3393	5478
	(0.51)	(1.95)	(1.35)	(0.06)	(1.03)	(1.68)	(0.57)	(2.50)	(0.53)	(2.04)	(2.13)	(0.72)
Oranges	.1077	.0026	-.0139	.1402	-.2200	.0267	-1.036	.1592	.0009	.0942	.03418	.4636
	(0.72)	(0.02)	(0.51)	(1.88)	(2.17)	(0.57)	(7.55)	(2.17)	(0.01)	(2.02)	(0.49)	(0.49)
Peaches	.4197	.2745	.0286	.0489	.2837	.2256	.2942	-.8180	-.0334	.0969	-.3599	.6823
	(2.18)	(1.36)	(0.74)	(0.39)	(1.75)	(2.49)	(2.17)	(4.60)	(0.25)	(1.04)	(2.79)	(0.73)
Pears	-.3174	.0077	.0230	.0449	-.1778	-.0960	-.0031	-.0576	.3038	-.4419	.3676	.6789
	(1.16)	(0.02)	(0.42)	(0.21)	(0.68)	(0.53)	(0.02)	(0.25)	(0.94)	(2.61)	(1.62)	(0.57)
Strawberries	.4544	-.4602	-.0555	.0544	-.0219	-.2252	.2590	.1441	-.3793	-.2640	.1471	-.3697
	(2.53)	(2.06)	(1.64)	(0.40)	(0.13)	(2.04)	(2.03)	(1.05)	(2.61)	(1.80)	(1.03)	(0.49)
Watermelon	0938	-.3234	.0465	-.0917	.1718	.1525	.0478	-.2735	.1619	.0750	-.6143	0.7524
	(0.69)	(2.06)	(1.77)	(0.94)	(1.37)	(2.13)	(0.49)	(2.79)	(1.62)	(1.02)	(4.35)	(1.27)
Weights	.00175	.00121	.00008	.00047	.00069	.00029	.00091	.00049	.00029	.00033	.00065	

Note: 1) Numbers in parentheses are t-ratios; 2) Some notations are Exp (total expenditures), Weights (expenditure weights).

imposed. Many of the parameter estimates were rather close to those obtained by the sequential estimation procedure. This is not surprising as estimates of most aggregate cross-price parameters for the fresh fruit (vegetable) group were not significant statistically (Table 1). In other words, the advantage (or necessity) of applying a two-step sequential estimation procedure partly depends on how the commodity group under estimation is interrelated with the remaining commodities with respect to demand.

Conclusions

Demand responses for 11 fresh fruits and 10 fresh vegetables to changes in prices and income (expenditures) were modeled using a composite demand system approach. The estimation followed two sequential steps. First, an aggregate demand system consisting of 11 food groups and a nonfood sector was estimated. The parameter estimates obtained in this fashion were then used in the estimation of fresh fruit and vegetable demand subsystems to exclude the price effects of other food groups and the nonfood sector. The analysis of fresh fruit and vegetable demand, thus, partially incorporated the interdependent demand relationships among all commodities. Since the price and expenditure elasticities were obtained directly from estimating the demand systems specified, their statistical inferences were straightforward.

Most fresh fruits and vegetables as well as aggregate commodity groups were found to respond significantly to changes in their own prices and in the directions as expected. All own-price elasticities obtained (except for grapes and oranges) were less than unity. The demand for all fresh vegetables and most fresh fruits was found to increase when per capita total expenditures rose. However, few estimates of expenditure elasticities were statistically significant. The estimates are quite close to those of Huang's study (1993), yet more fresh produce items have been included in this estimation. The study, therefore, provides more detailed information about the U.S. retail demand for fresh fruits and vegetables.

Table 3
Demand Elasticities for Selected Fresh Vegetables

	Price										
Vegetables	Aspara	Cabbage	Carrots	Celery	Cucumb	Lettuce	Onions	Peppers	Potatoes	Tomatoe	Exp
Asparagus	-.6503	-.1941	.2062	.5714	.0022	-.0581	.1112	-.5163	.4117	-.1553	.7611
	(2.36)	(1.63)	(0.63)	(2.32)	(0.01)	(0.26)	(0.69)	(2.07)	(2.24)	(0.38)	(0.62)
Cabbage	-.0422	.0197	-.0211	.0256	-.0622	.1081	.0436	-.0546	-.0273	.1265	.2129
	(1.62)	(0.58)	(0.35)	(0.63)	(1.62)	(2.09)	(1.22)	(1.26)	(0.62)	(1.58)	(0.72)
Carrots	.0422	-.0198	-.4685	-.1947	.0840	-.0494	.0651	-.0410	.0700	.1499	.1550
	(0.63)	(0.35)	(2.30)	(1.99)	(0.88)	(0.40)	(0.78)	(0.39)	(0.65)	(0.75)	(0.22)
Celery	.1036	.0210	-.1729	-.0325	.1290	-.0439	-.0618	-.1307	.0682	.0795	.8605
	(2.32)	(0.63)	(1.99)	(0.37)	(2.06)	(0.68)	(1.34)	(2.07)	(1.25)	(0.71)	(2.38)
Cucumbers	.0006	-.0762	.1093	.1899	-.3022	.0735	-.1199	.0749	-.0102	.0290	.4003
	(0.01)	(1.62)	(0.88)	(2.06)	(2.61)	(0.74)	(1.83)	(0.78)	(0.12)	(0.18)	(0.72)
Lettuce	-.0023	.0198	-.0098	-.0095	.0111	-.0115	-.0037	-.0102	-.0481	.0512	.3628
	(0.26)	(2.08)	(0.40)	(0.67)	(0.74)	(0.13)	(0.18)	(0.56)	(0.90)	(1.56)	(0.70)
Onions	.0149	.0267	.0424	-.0455	-.0602	-.0129	-.1588	-.0327	-.0625	-.0178	.6017
	(0.69)	(1.22)	(0.78)	(1.33)	(1.83)	(0.19)	(3.02)	(0.81)	(1.07)	(0.24)	(1.51)
Peppers	-.1024	-.0499	-.0400	-.1429	.0557	-.0511	-.0486	-.2535	-.0081	.0109	.5661
	(2.07)	(1.26)	(0.39)	(2.07)	(0.78)	(0.56)	(0.81)	(2.47)	(0.10)	(0.08)	(1.08)
Potatoes	.0186	-.0057	.0153	.0172	-.0017	-.0541	-.0209	-.0018	-.1552	.0134	.4048
	(2.24)	(0.62)	(0.65)	(1.27)	(0.13)	(0.90)	(1.07)	(0.10)	(2.22)	(0.41)	(0.82)
Tomatoes	-.0085	.0315	.0397	.0240	.0058	.0689	-.0073	.0030	.0157	-.3790	.6581
	(0.38)	(1.57)	(0.75)	(0.71)	(0.18)	(1.55)	(0.24)	(0.08)	(0.40)	(4.03)	(2.49)
Weights	.00009	.00039	.00042	.00047	.00032	.00213	.00064	.00043	.00190	.00157	

Note: 1) Numbers in parentheses are t-ratios; 2) Some notations are Exp(total expenditure), Weights (expenditure weights).

The composite demand system approach, as conducted in two sequential steps, overcomes the problem of insufficient degrees of freedom and appears to be a promising approach in estimating a large scale demand system. However, the cross-price parameters of commodity groups represent only approximately the effects of other prices outside a particular commodity group under estimation; and, therefore, sufficient care should be given in grouping commodities in order to achieve a high degree of isolation of the price effects of all other commodity groups in the estimation of a demand subsystem. Finally, note that the matrixes of demand elasticities were estimated when the neoclassical restrictions were enforced locally at the point of reference for the selected fixed expenditure weights. When data become available, a functional form which allows global enforcement of the restrictions may apply.

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Endnote

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4. These are all periodical publications. Previous issues were also used as data sources.

Consumer Satisfaction with Managed Health Care

This study estimates the effects of four categories of variables hypothesized to influence consumer satisfaction with a managed care health benefits plan. Ordinal probit is used to utilize the full spectrum of information available on the satisfaction measure. Results show that personal experience, expectations, and judgements about provisions of the plan all influence overall satisfaction. If managed care health plans are "here to stay" steps can be taken by administrators of the plan to increase consumer satisfaction.

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Key in the search for an answer to whether managed care health benefits plans will solve the nation's health care woes is knowledge of *consumers'* perceptions of how they fare when covered by these plans. Managed care, in general, describes insurance plans that base themselves on networks of providers (Miller et al., 1994). In this study, managed care means a plan in which consumers must choose a primary care physician from a network. To obtain medical services, a chosen primary care physician must be seen first. This medical professional acts as gatekeeper to further medical services.

Steele (1992) summarized the role of the consumer in shaping health services:

> In order to provide health services which are responsive to consumers' needs, those organizations whose role it is to purchase, provide, or assess health services have a duty to carry out consumer appraisal work. Consumers are experts. They are experts on their own priorities, their own needs, and their own experiences, and they should be consulted as should any other expert group (p. 37).

This study examines how utilization of services, consumer experiences that impact their expectations of plan provisions, and individual differences influence consumer judgements of satisfaction with managed care.

Literature Review

Several researchers have considered the concept of patient satisfaction. Luft (1981) characterized satisfaction as being related to access, availability of resources, continuity of care, information transfer, humanness, and quality, having reviewed some of the earlier (pre 1975) literature in the area of patient satisfaction. Higgens et al. (1991) suggest ten dimensions of quality that are specific to Health Maintenance Organizations (HMOs): reliability, responsiveness, competence, access, courtesy, communication, credibility, security, knowing the customer, and tangibles.

Researchers who empirically examined consumer satisfaction with health care have suggested that satisfaction is influenced by aspects of care that are specific to the health care experience (Abramowitz et al., 1987; Strasser et al., 1993; Cleary et al., 1988; Doering, 1983; Russell, 1990; Ware et al., 1975; Woodside et al., 1980), and that consumers are able to form summary measures of their satisfaction based on their satisfaction with components of care (Aharony et al., 1993; Luft, 1981; Strasser et al., 1993). Quality of care, access to care, availability of resources, and continuity of care accounted for 72% of the variance in satisfaction in a study by Ware and Snyder (1975), while Russell (1990) found that quality of care and accessibility accounted for 64% of the variance. Ward (1990) found that older persons, increases in acceptance of providers other than the primary care physician, ability to see the primary care physician and plan familiarity all positively influenced consumer satisfaction with HMO services.

Some researchers have focused specifically on the process of health care delivery (distinct from the physical outcome) as being a major influence in consumer perceptions of satisfaction with medical services (Buller et al., 1987; Street et al., 1995; Woolley et al., 1978). Swan (1992) has suggested that the formation of patient satisfaction perceptions are based on a reciprocal process that is influenced by both the consumer and provider of medical services. This is an extension of the expectation/disconfirmation model (Cardozo, 1965), and is complementary to the work of Woodruff et al. (1983) and Oliver (1989) in which it is asserted that consumers develop a set of experienced based norms on which they judge whether expectations are disconfirmed. It is Swan's (1992) proposition that "patient expectations and standards for performance are negotiated as health care providers attempt to change unrealistic patient expectations/performance standards" (p 69). This idea is of potentially great importance when examining consumer satisfaction with managed care, as consumers in the U.S. may have preconceived perceptions of how health care systems should work based on the typical free choice, third party payer system that has been common in the United States.

Recent research has focused specifically disenrollment from managed care health benefits plans (Long et al., 1988; Solnick et al., 1992; Weiss et al., 1990). Weiss and Senf (1990) found that the number one reason for disenrollment from a plan was the desire for a different primary care physician. Issues such as appointment scheduling and difficulty in getting referrals to specialists ranked seven and eight out of ten reasons.

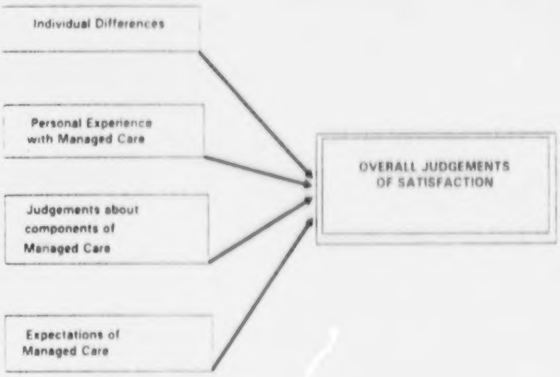
Other research has focused on the market performance of managed care plans using supply side measures such as the provision of care, length of hospital stays, number of physician office visits, and cost structures (Fielding, 1984; Miller et al., 1994). Miller and Luft (1994) included an evaluation of five studies that focused on consumer satisfaction with managed care plans and found that with only one exception, consumers tend to be satisfied with perceived quality of care, patient-physician interactions, and financial aspects of health care plans when compared with traditional fee for service, third party payer plans.

The above literature review reveals that there are many dimensions of medical care that can influence consumers' satisfaction. In addition to these dimensions that are either directly or indirectly associated with satisfaction, there are variables specific to the individual consumer or situation that can impact on satisfaction. It is also clear that there is a gap in our knowledge of how managed care health benefit plans and their configurations help shape the satisfaction of consumers enrolled in such plans. There is no current research that examines how various parts of a managed care plan, how consumer satisfaction with various the parts and how experience and socio-demographic factors influence overall satisfaction.

Conceptual Framework

Based on the many models of consumer satisfaction in general, and patient satisfaction in particular, the model in Figure I is proposed to explain the process of consumer satisfaction with managed care health benefits plans. It incorporates the known influences on consumer satisfaction and dissatisfaction including expectations and disconfirmation of those expectations, individual differences, subjective judgements about individual components health services, and personal experience (with the health care delivery system) (Oliver, 1989; Parasuraman et al., 1988; McKelvey et al., 1975; Swan et al., 1980; Woodruff et al., 1983).

FIGURE 1. Conceptual Framework to Examine Consumer Satisfaction with Managed Care


Individual Differences
Personal Experience with Managed Care
Judgements about components of Managed Care
Expectations of Managed Care
OVERALL JUDGEMENTS OF SATISFACTION

Estimation

Ordered Probit Model

The dependent variable is consumer satisfaction with managed care, an ordinal construct. Despite the fact that the measurement of satisfaction can be conceptualized on an interval scale, differences in people's perceptions of that scale makes measurement on that level non-operational. In order to use a multivariate regression type of analysis, this limitation in the measurement of the dependent variable is an important consideration. Therefore, an ordered probit model is used (McKelvey et al., 1975; Winship et al., 1984). If the probability that the dependent variable increases slowly at low and high levels and increases more quickly at intermediate levels, the cumulative normal probability function is an appropriate representation of the underlying, unmeasurable scale for satisfaction and an ordered probit specification is preferable to the linear model because it takes into account the floor and ceiling effects of the dependent variable (Hanushek et al., 1977). Because the cumulative normal transformation is non linear, we must obtain estimates for the parameters that influence satisfaction using maximum likelihood methods (Pindyck et al., 1981).

Data

The population included 2955 employees eligible for health care benefits at a medium sized university. The health benefits choices for these employees changed in July 1993. Data were collected in October 1994. Previous to the change, 95% of employees chose a fee for service plan where any physician or specialist could be chosen and there was no co-payment. Five percent chose an HMO which charged a $5.00 co-payment and 100% of the cost of seeing a physician other than the chosen primary care provider. This study concentrates on the employees who were forced to change to a managed care plan if they wished to be insured by the University. These employees had three choices: an "in-network" managed care plan, where a $2.00 co-payment is required for office visits and a 20% out of network charge, and "out-of-network" plan where the individual can choose any physician and pay 10% of the cost, and the originally offered HMO plan, now with a $2.00 co-pay. Completed questionnaires were received from 1238 employees, for an overall response rate of 42%. The responses received were representative of actual enrollments in the three plans, with the majority (86.5%) of respondents enrolled in the in-network plan, 5% in the out-of-network plan, and 8.5% in the HMO. For this particular study, we focus on those employees enrolled in the managed care plan, either in- or out-of-network. These respondents faced a change in their health care plan. Less than 2% of the employees facing a change in plan chose the HMO previously offered. The final number of respondents who had complete information on all the variables included in this analysis is 1120.

Variables Measured

The dependent variable is *general* satisfaction with managed care, created from a five point ordinal Likert scale that included categories from strongly disagree to strongly agree for the statement, "I am satisfied with my health benefits choice" (See, for example, Aharony 1991; Lutz 1981; Strasser et al. 1993). Independent variables include measures related to the four categories of variables outlined in Figure 1: individual differences, personal experiences with managed care, judgements about individual components of managed care, and expectations of managed care. Measures of individual differences include the demographic variables age of respondent (AGE), measured using actual age, two dummy variables representing income level categories of less than $15,000 and greater than $50,000 (LOWINC, HIGHINC), a dummy variable representing gender, with female as the omitted category (MALE), and employee type (a proxy for educational level), measured as a 0/1 dummy variable where the omitted category is faculty/officer of administration and the included category is support staff (STAFF).

Personal experiences with managed care include measures of the number of problems actually experienced with various components of the health benefits plan during the previous twelve months if an individual used the health plan, and whether a respondent was dissatisfied with their most recent experience. Using both of these measures allows an evaluation of how quantity of dissatisfaction about specific components of a health plan and how salience of a dissatisfactory experience benefits plan impact on overall satisfaction. The measures of the actual number of dissatisfactory experiences, if the plan was used, include the benefits plan components of primary care physicians (NPRPCP), mental health care providers (NPRPROV), and managed care representatives (NPRADM). The same components are used in the dissatisfaction with most *recent* experience variables (DISPCP, DISPROV, DISADM), measured as 0/1 dummy variables.

Factor analysis was used to create variables to measure judgements about individual aspects of the plan. Identified factors include quality and availability of resources related to primary care physicians (PCPQUAL), physical health benefits in general (PHYSQUAL), prescription drug services (DRUGQUAL), the administration of benefits by the benefit office (BENQUAL), and mental health services (MENTQUAL). Access to care in general (ACCESS) also revealed itself as a factor. One additional factor (CHANGES) is more applicable as a measure of expectations and is discussed below. Table 1 identifies the factor loadings after varimax rotation (See Green et al. 1988). Given the measures available, these results are consistent with the factors described by Ware and Snyder (1975) and Russell (1990). Expectations consumers have of a health benefits plan are measured using three variables. (CHANGES), identified in the factor analysis, addresses how a consumer feels about adequacy of services that changed when a move to managed care was made, and includes issues of subjective comparison of the old and new plans in general, and adequacy of specialty and emergency care. Services related to emergency and specialty care are restricted under the managed care plan and require a referral. Under the old plan, a consumer could visit any specialist or emergency room at any time and have the services covered. Whether a consumer is covered by another plan (OTHERPL) and whether the consumer

Table 1 Formulation of Factors

VARIABLE	BENQUAL	ACCESS	MENTQUAL	DRUGQUAL	PHYSQUAL	PCPQUAL	CHANGES
Benefits office is professional.	.36						
Benefits office is informed.	.40						
Benefits office solves problems.	.39						
Appointment scheduling is difficult.		.52					
Time between making appointment and seeing M.D. is too long.	.51						
Co-payment limits my ability to seek care I need.	.24						
Mental health benefits are convenient to use.			.58				
Mental health benefits are adequate.			.56				
Prescription drug benefits are convenient to use.				.54			
Prescription drug benefits are adequate.				.60			
Physical health benefits are convenient to use.					.49		
Physical health benefits are adequate.					.58		
I am satisfied with my primary care physician.						.55	
Emergency care is adequate.						.58	
Specialty care is adequate.						.42	
Eigen value		3.37	2.42	1.65	1.10	1.04	1.01

N=1120

was employed at the University when the health care plan choices changed (HERECHN) are measures of consumer familiarity with different types of plans. This knowledge may influence their expectations of a health care plan. Finally, the type of plan the consumer is enrolled in, whether in- or out-of-network could also influence expectations. Being enrolled in the out-of-network plan is the left out variable (INNET). Table 2 provides descriptive statistics of the measured variables.

Empirical Model

The equation to be estimated is:

$$\text{SATISFACTION} = \alpha_0 + \alpha_1\text{AGE} + \alpha_2\text{LOWINC} + \alpha_3\text{HIGHINC} + \alpha_4\text{MALE} + \alpha_5\text{STAFF} + \alpha_6\text{PCPQUAL} + \alpha_7\text{PHYSQUAL} + \alpha_8\text{DRUGQUAL} + \alpha_9\text{BENQUAL} + \alpha_{10}\text{MENTQUAL} + \alpha_{11}\text{ACCESS} + \alpha_{12}\text{CHANGES} + \alpha_{13}\text{ OTHERPL} + \alpha_{14}\text{HERECHN} + \alpha_{15}\text{OUTNET} + \alpha_{16}\text{PRPCP} + \alpha_{17}\text{DISPCP} + \alpha_{18}\text{ NPRADMS} + \alpha_{19}\text{DISPROV} + \alpha_{20}\text{NPRADMS} + \alpha_{21}\text{DISADMS} + \text{ERROR}$$

The model is estimated using ½ of the sample and several different permutations of the dependent variable to identify the best fit. To test the specification, the best fitting model is estimated using the second half of the sample.

Results

Results from the first half of the estimation are found in Table 3. These coefficients are interpreted as "the increment in probability of being in a higher response category brought about by a unit change in the independent variable" (McKelvey and Zavoina 1975, p 114).

Note there are three different measures of the dependent variable. The first uses all the information available on the Likert scale, thus the dependent variable represented in column 1 of Table 3 has five different levels of measurement from strongly agree, coded as 5 to strongly disagree, coded as 1. There is a neutral category. Column 2 of Table 3 represents results using a four level measure. The neutral category is left out (note fewer observations are used). Leaving out the neutral category is analogous to McKelvey and Zavoina counting abstentions from voting for a particular bill as missing data instead of neutral votes in their 1975 examination of ordinal probit. Column 3 presents the results using a two level, agree/disagree measure. This is the standard bi-nomial Probit.

The two ordered probit models performed similarly. The same variables are significant, and are of the same sign. Both the five and four level specifications were included to test whether persons answering neutral could really be considered as being in the middle of the Likert Scale or answered so because they did not know. In this survey, the neutral category is significant. The binomial probit model, however, paints a different picture about the variables that affect satisfaction with managed care health benefits plans. Interesting are the results that indicate in the binomial model that demographic variables including being male, having an income greater than $50,000, and being a staff member rather than faculty or an officer of administration affects satisfaction. None of these demographic variables are significant when full use is made of the information about the dependent variable.

Table 2. Summary Statistics

VARIABLE	DEFINITION	MEAN	σ
SATISFIED	1=SD 2=D 3=N 4=A 5=SA	2.89	.91
AGE	Age of respondent	44.71	10.30
MALE	Respondent is male^D	.35	.48
INNET	Enrolled in-network^D	.92	.26
LOWINC	income < $15,000^D	.06	.23
HIGHINC	income > $50,000^D	.14	.35
OTHER	Has other health insurance	.12	.33
NPRPCP	# problems with primary care M.D.	.54	1.5
DISPCP	Dissatisfied with last PCP experience^D	.09	.29
NPRPROV	# problems with mental health provider	.34	1.4
DISPROV	Dissatisfied with last mental health provider experience^D	.05	.23
NPRADM	# problems with plan administration	.74	2.5
DISADM	Dissatisfied with last adms. experience^D	.13	.34
STAFF	Staff, not faculty or officer of adms.^{D}	.67	.47
HERECHN	Experienced previous health care plan^D	.84	.36

N = 1120

The three estimated variables MU1-MU3 in the five level model and MU1-MU2 in the four level model identify the positions on the underlying interval scale of the ordinal measures strongly agree to strongly disagree with overall satisfaction with managed care. These variables are interpreted as follows for the five level model. If an individual's estimated location on the underlying scale is less then zero, the individual is very dissatisfied with their health care plan. Those with estimated locations between zero and .74 are dissatisfied. Those with estimated locations between .75 and 1.26 are neutral. Those with estimated locations between 1.27 and 3.21 are satisfied. And, individuals' whose estimated position falls above 3.22 are very satisfied. All the MU variables are significant. Based on the above discussion, the model utilizing the fullest information about the dependent variable (5 levels) was tested using the other half of the sample. These results are presented in the last column of Table 3. The final model estimated using the hold out sample performed very similarly to the model estimated on the first half of the sample. Three variables **negatively** affect satisfaction with managed care health benefits: being older, having a salient dissatisfactory experience with the administrators of the plan, and believing the managed care plan limits access to care. Five variables **positively** affect satisfaction: being satisfied with the benefits office that oversees the benefits plan, believing that the physical health benefits coverage and primary care physicians are of high quality, and the three variables measuring changes in satisfaction in the underlying, yet unmeasurable interval scale. Three of the four components of the conceptual model presented as Figure 1 influence judgements of overall satisfaction with managed care. To some extent personal experience with managed care influences satisfaction, but it is limited to experience with administrators of the plan. Judgements consumers make about the components of managed care influence satisfaction most.

Discussion

Results indicate that, with the exception of the age of the enrollee, demographic variables **do not** influence whether or not an individual is satisfied with their health benefits plan. How consumers perceive the quality, access, and convenience of using various components of the plan **do** influence satisfaction. These results are similar to the findings of other researchers who have found that satisfaction is related to qualities describing components of health care provision, including access, availability of resources, competence, and continuity (Russell, 1990; Abramowitz et al., 1987; Higgins et al., 1991; Woodside et al., 1980). Specific to this study are the findings that consumers who find care accessible with regard to appointment scheduling and co-payments, who agree that physical health benefits are convenient to use and provide adequate coverage, who are satisfied with their chosen primary care physician, and who believe the office that oversees benefits is informed, solved problems, and acts in a professional manner are more likely to be satisfied with their overall managed care benefits plan. The following discussion details these results.

Enrollees who agree that emergency and specialty care are adequate are more likely to be satisfied in general with their benefits plan. These components of the plan changed with the move to managed care and are used to measure expectations consumers may have brought with them when the managed care health plan was introduced. Under the new plan, specialty care is available by referral only and the emergency room of hospitals is not to be used for routine care. If consumers expectations were met, their overall satisfaction was increased. Because access to these services could be

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Table 3. Probit Results Using Different Measures of the Dependent Variable: Satisfaction

INDEPENDENT VARIABLES	5 levels SD-D-N-A-SA	4 Levels SD--D--A--SA	2 levels D-----A	FINAL MODEL 5 LEVELS SD-D-N-A-SA
INTERCEPT	4.90**	4.53**	4.36	3.47**
AGE	-.01*	-.00	-.93	-.88*
GENDER	-.07	-.17	.44*	-.14
OUTNET	.10	-.22	-.24	.09
LOWINC	.11	-.34	-.06	-.17
HIGHINC	.20	.31	.59*	-.11
OTHER	-.10	-.91	-.23	.15
NPRPCP	-.04	-.23	.11	-.05
DISPCP	-.18	-.19	-.16	-.04
NPRPROV	.02	-.09*	.02	.05
DISPROV	.04	-.11	.23	.33
NPRADM	-.02	-.07	-.01	-.04
DISADM	-2.14**	-1.77**	2.97	-1.17*
BENQUAL	.21**	.19**	-.02	.21**
ACCESS	-.26**	-.28**	-.20*	-.22**
MENTQUAL	.05	.06	.63	.08
CHANGES	.08*	.15**	.17*	.06*
DRUGQUAL	-.02	-.02	.07	.04
PHYSQUAL	.24**	.39**	.81**	.16**
PCPQUAL	.34**	.40**	.57**	.33**
STAFF	-.02	.12	.53**	-.05
HERECHN	-.09	-.08	-.11	-.08
MU 1	.74**	.80**		.75**
MU 2	1.26**	3.23**		1.20**
MU 3	3.21**			3.06*
Log Likelihood	.32E-13	.32E-13	.32E-13	.32E-13
N	531	480	531	589

perceived as being curtailed, administrators of benefits plans must, in a positive light, change consumer expectations about access to these services. For example, consumers may be shown how their primary care physician will be available for local emergencies, or how easily the plan covers "out of town" emergencies.

The specification of the model included the ability to discern whether overall satisfaction with a managed care health benefits plan is influenced by recent personal experiences with components of the health plan (the last encounter with an aspect of the plan). Results indicate that salient dissatisfactory experiences with physicians and mental health care providers do not impact on overall satisfaction, while dissatisfactory salient experiences with administrators of the plan (including managed care representatives and insurance handlers) have a negative influence on satisfaction. It appears that consumers are willing to "put up" with dissatisfaction with providers, but not with those who actually manage the plan. Because the plan studied in this research is relatively new, this results points to the need of administrators tied directly to the plan to provide top quality service to consumers if managed care is to be seen as a satisfactory alternative to traditional insurance plans. Along the same lines, if the office associated with overseeing the plan is seen in a positive light by enrollees, satisfaction with the benefits plan is increased. This finding is extremely important as the administrators of the plan provide the information that sets the tone for consumer expectations. The bottom line is that since an additional layer of administration is added under managed care, consumers must be able to communicate effectively with this bureaucratic layer probably to the point of "not even knowing it is there." The administrative aspects of managed care must take a back seat and the medical services provided shine in the forefront.

Limitations of the study must be noted. First, this is a study of one managed care plan offered as an employee benefit. There is little opportunity for consumers to decline insurance benefits and disenroll from the plan. thus, the study is limited in its ability to be generalized to all managed care health plans. Despite this limitation, the results indicate that when full information is used on the dependent variable (satisfaction) consumer judgements about various components of the plan are related to overall satisfaction with the plan. While consumers base their overall assessments of satisfaction on their general beliefs about components of the plan including accessibility, quality, and coverage, they also base their assessments on their satisfaction of the last encounter with administrators of the plan (personal experience). This finding has relevance for increasing satisfaction, and thus, acceptance of managed care health plans by consumers. The bottom line is not new for those familiar with the customer satisfaction literature: *get it right the first time and every time*. However, it appears that consumers are more forgiving of the actual providers of care than they are of the administrators directly associated with providing payment (insurance) and managing care (managed care representatives).

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Endnotes

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Impacts of Income and Payment Sources on Consumer Medical Expenditures

This paper investigates consumer medical expenditure patterns by an economic model. The data is from the 1987-88 National Medical Expenditure Survey. The results suggest that different income and payment components affect the expenditure in different directions. These findings have important policy implications such as initiating cost containment policies in health care reform. In addition, the economic model developed in the paper provides a useful framework for investigating consumer health seeking behavior.

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Use of health services in the United States largely depends on consumer affordability since expenditures on health care account for a considerable portion of family income (Taylor and Banthin, 1994). Disease control and prevention continue to be important public-health issues since about 15% of the population have no health insurance and lack access to affordable health care (Rainbolt, 1995). Heavy financial burdens of health care to the Government (Federal and State) have warranted cost containment as a major goal of health-care reform (Jones, 1992). Knowledge of factors influencing consumer health seeking behaviors is very useful for evaluating public health programs and initiating public health policies (Hakkinen, 1991).

Consumer health-seeking behaviors may be distorted for many reasons such as the availability of health insurance and nonprofit organizations. In addition, consumers have different preferences for health care services based on their socio-economic characteristics and health status. The different preferences lead to the different utility levels derived from using these services. Therefore, studying the relationship among consumer socio-economic characteristics, health status, and health-seeking behaviors has important implications for measuring public health status and evaluating public disease-prevention programs.

Income, one of the most important indicators of economic status, from different sources may have different effects on consumer utilization of health care. Moreover, use of income from social-welfare programs such as Aid to Families with Dependent Children (AFDC) and Medicaid may be restricted to specific purposes. These restrictions affect consumer consumption decisions.

Different payment sources also link consumer budget constraint and may be major determinants in seeking health care. Reviewing the literature of health care demand reveals that effects of income and payment sources on consumer utilization of medical services have not been addressed. For example, numerous studies on demand for health care have focused particularly on either the relationship between insurance status and health care use or demand for a specific health services for a specific population group.

Several studies used income as an independent variable and reported an insignificant coefficient estimate (e.g., Van De Ven and Van Der Gaag, 1982; Freiman et al., 1993; and Jones and Salkever, 1995). Van De Ven and Van Der Gaag suggested that separating earned income from unearned income might be needed, but they were unable to do further investigation because of data problems.

Many other studies analyzed the effects of consumer payment sources on health-care use (e.g., Duan et al., 1983; Nelson et al., 1984; Leibowitz et al., 1985; Moeller, 1989; and Smith, 1993). However, they only used insurance indicators (dummy variables) as independent variables. The influence of actual payment shares by consumers, insurance companies, and social health programs on health seeking behavior have never been addressed.

This research attempts to fill this gap and provides information about the impacts of income sources and actual payment shares on consumer health seeking behavior. Specifically, this paper develops an economic model and examines the effects of various income and payment sources on consumer medical expenditures using the 1987 National Medical Expenditure Survey (1987 NMES). Relationships among consumer health status, socio-demographic characteristics, and the medical expenditures are also analyzed.

Theoretical Framework

Consumers derive utility from using health care services such as physician visits and prescriptions as well as from consuming an aggregated commodity which may include food, clothing, housing, etc. Different from other consumer goods, health care is extraordinary (Mushkin, 1962). Demand for health care depends on a person's health status and health-care use is an indicator of health deterioration (Hakkinen, 1991). A health-care service for a healthy person may simply not be a relevant good in his consumption bundle; i.e., this service cannot be classified as a normal or an inferior good. Thus, the utility function should be expressed as:

$$U = U(H|_{HS}, X) \,, \qquad (1)$$

where H is a set of health services available to consumers, HS is a set of health status indicators, and X is an aggregated commodity.

Assuming a representative consumer has S income sources such as salary and social welfare income, and M payment sources for medical services such as out-of-pocket and insurance coverage, the utility maximization problem can be formulated as:

$$\begin{aligned} Max \quad & U = U(H|_{HS}, X) \,, \\ s.\ t. \quad & H(P_h w_{h1}) + XP_x \le Y \,, \\ & Y = \sum_{s=1}^{S} y_s \,, \\ & P_h = \sum_{j=1}^{M} w_{hj} P_h \,, \\ & 0 \le w_{hj} \le 1 \,, \quad and \\ & \sum_{j=1}^{M} w_{hj} = 1 \,, \end{aligned} \qquad (2)$$

where P_h is the charge per unit of health service H, P_x is the price of commodity X, Y is the total income, y_s is the income from source s, and w_{hj} is the payment share from source j for the health service H and w_{h1} is out-of-pocket payment share.

A major difference between this formulation and conventional consumer utility maximization problem is the addition of medical payment components. In the budget constraint, only the out-of-pocket payment should be included. The payment shares of medical expenditures are important factors in determining consumer utility levels besides the conventional factors of income and prices.

Solutions for the consumer utility maximization problem can be represented by:

$$H = f(w_{h1}, \dots, w_{hM}, y_1, \dots, y_S, P_h, P_x, HS) \qquad (3)$$

For a cross-sectional survey data, variations in charges for a health service, P_h, and the commodity price P_x, are mainly due to service quality and regional differences. They can be captured by consumer socio-demographic characteristics and regional dummy variables.

Therefore, by replacing the P_h and P_x equation (3) can be rewritten as:

$$H = f(w_{h1}, \dots, w_{hM}, y_1, \dots, y_S, D, HS) \,, \qquad (4)$$

where D is a vector of consumer socio-demographic characteristics such as age and family size and regional dummy variables.

Equation (4) shows that consumer demand for health services is a function of payment shares, income from various sources, socio-demographic characteristics, regions the consumer resides, and his/her health status. This formulation allows that payments and income from different sources affect the demand differently. Compared to without separating income into various categories and only using insurance (or copayment) indicators, this formulation is more capable of reflecting consumer preferences.

Empirical Model Specification

For empirical analysis, the demand for health care in this study is measured by total medical expenditures (Duan et al., 1983). The independent variables include four payment shares: share of out-of-pocket, share of private insurance coverage, share of social transfer programs such as Medicaid and Medicare, and share of other sources. Only three shares are included in regression estimation to avoid singularity problems. A negative relationship between medical expenditures and out-of-pocket share is expected. Consumers may be less likely to seek health-care services if a larger proportion of the fee paid from out-of-pocket, other things equal. In contrast, a larger share of payments from insurance policy and social welfare should influence medical expenditures in positive directions.

Three income sources are included as independent variables to capture the effects of consumer socio-economic status on the demand. They are (1) salary income (including tips and business earnings), (2) social welfare income (including social security), and (3) other income including veteran's payment, retirement, alimony, child support, interest, etc. It is expected that individuals with a higher wage income spend more on health care because they can afford it, other things equal. Social welfare income has a negative impact on the expenditures because it is an indicator of poverty status. Since many individuals such as children do not have any income, these income variables are derived by dividing family income by family size.

The socio-demographic variables include family size, age, race, gender, and education. The family size is used because it may be directly related to consumer health-care choices. For example, compared with small families, large families, especially those including children, may consider more things such as location, price, or specialty of health-care facilities. Age, race, and gender are used to reflect health care needs based on biological and ethnic differences. The educational levels refer to years of school completed by the reference person. It is assumed that the reference person has a substantial influence on decisions of other family members in using health-care services, especially those for children. Three regional dummy variables are used to capture the effects of regional differences of health-care quality and availability.

Another set of explanatory variables are health status measures. They are approximated by the frequency of health service use. Since health-care use is an indicator of health deterioration (Hakkinen, 1991), it is assumed that the more frequent an individual uses health services, the poorer his health condition is. Three variables are identified for this study (Freiman et al., 1993). They are ambulatory visits, total number of prescriptions purchased, and inpatient stays.

Ambulatory visits includes visits to a medical provider, a hospital outpatient department, or emergency room that did not result in an inpatient stay. Each prescription medicine event represents one purchase or refill of a medication. To ensure the flexibility of the effects of severity of illness on the expenditures, a quadratic term is included as an independent variable for the ambulatory visits and prescription drugs, respectively. Positive coefficients of the quadratic terms means that marginal utilities of health-care utilization are increasing. And it is decreasing if the coefficients are negative.

Inpatient stays are the number of hospital visits that resulted in an admission. Home health visits are included if the providers were medical or nonmedical personnel employed by formal caregiving organizations (or self-employed) who provided personal care services in the home for monetary compensation. This variable of inpatient stays is indicated by a dummy variable. Thus, a double log demand model is specified as:

$$\begin{aligned}\ln(EXP) = {} & \alpha_0 + \alpha_1 \ln(IN_1) + \alpha_2 \ln(IN_2) + \alpha_3 \ln(IN_3) + \\ & \alpha_4 \ln(PW_1) + \alpha_5 \ln(PW_2) + \alpha_6 \ln(PW_3) + \\ & \alpha_7 \ln(HS_1) + \alpha_8 \ln(HS_1)^2 + \alpha_9 \ln(HS_2) + \\ & \alpha_{10} \ln(HS_2)^2 + \alpha_{11} HS_3 + \sum_{i=1}^{n} \beta_i D_i + e \ ,\end{aligned} \tag{5}$$

where the variable definitions are presented in Table 1, D's are socio-demographic and regional dummy variables, α's and β's are the parameters to be estimated, and e is the error term.

There are two important reasons for adopting the double-log specification. (1) The logarithmic transformation is helpful in diminishing the influence of extreme values and assuring statistical properties of the data such as normality (Duan et al., 1983; Moeller, 1989; Gerdtham et al., 1992; and Freiman et al., 1993). The normality property of the data yields more robust estimates. Many pervious studies have adopted the double-log functional specification (e.g. Nelson et al., 1984; Leibowitz et al., 1985; Gerdtham et al., 1992; and Smith, 1993). (2) It is linear in parameters, robust to model misspecification, and appearance of elasticities as parameters (LaFrance, 1986). The coefficients of the logged variables are the elasticities. For example, the coefficients of payment shares can be interpreted as the payment share elasticities of medical expenditures.

Data

The 1987 National Medical Expenditure Survey (1987 NMES), the most recent comprehensive health care information available, serves as the data base. This survey was conducted in 1987, sponsored by the Agency for Health Care Policy and Research, Public Health Service, Department of Health and Human Services. (Cohen et al. (1991) provided a detailed description of the sample design.) The survey data provides comprehensive information on consumer socio-economic status such as income, family composition and detailed medical use, expenditures, and payment sources for the period from January 1 to December 31, 1987. Table 1 shows variable definitions and their sample statistics of the data.

Table 1

Variable Definitions and Selected Sample Statistics (N=21,217)

Variables	Definitions	Means	Std Dev
EXP ($)	annual total medical expenditure	2002.23	6397.01
IN_1 (\$)	income from wage, salary and tips	8205.29	1011.01
IN_2 (\$)	income from social transfer programs	1318.62	2171.29
IN_3 (\$)	income from other sources	3198.28	8048.05
PW_1 (%)	share of payment from out-of-pocket	47.99	0.38
PW_2 (%)	share of payment from private insurance coverage	28.35	0.35
PW_3 (%)	share of payment from social welfare programs	19.51	0.35
PW_4 (%)	share of payment from other sources	4.14	0.15
HS_1	number of ambulatory visits	9.79	23.56
HS_2	number of prescription medicine	7.09	12.96
HS_3(0,1)	1 if an individual has inpatient stays	0.12	
FS (person)	family size	3.31	1.69
AGE (year)	age of an individual	38.57	24.68
WHT (0,1)	1 if an individual is white	0.75	
BLACK (0,1)	1 if an individual is black	0.20	
NWB (0,1)	1 if an individual is not a white or black	0.05	
MALE (0,1)	1 if an individual is male	0.45	
FEM (0,1)	1 if an individual is female	0.55	
ED_1 (0,1)	1 if reference person completed less than 9 year of school	0.19	
ED_2 (0,1)	1 if reference person completed 9 to 12 years of school	0.45	
ED_3 (0,1)	1 if reference person completed more than 12 years of school	0.37	
NEA (0,1)	1 if an individual resides in Northeast region	0.20	
MW (0,1)	1 if an individual resides in Midwest region	0.25	
SOUTH (0,1)	1 if an individual resides in South region	0.36	
WEST (0,1)	1 if an individual resides in West region	0.20	

Table 2 presents medical payment shares and health service utilization by race and educational levels. These information are important in understanding consumer health seeking behavior. For example, compared with blacks, whites use more ambulatory visits and prescription medicine, but less likely use inpatient stays. This may imply that blacks are more likely to delay their illness treatment. The percentage of out-of-pocket payment is higher for white than for blacks. The opposite holds for the percentage of social welfare payment. This fact may suggest that social health programs should focus on encouraging blacks to use more ambulatory visits.

Estimation Results

The double-log model specified previously is estimated using the 1987 NMES data, providing statistically satisfactory results (Table 3). The R^2 is 0.74 and almost all parameter estimates except two are statistically significant at the 0.05 or higher levels. Most of the significant estimates have expected signs.

Coefficients of salary income and social transfer income are statistically significant at the 0.01 level with opposite signs. This is expected and implies that incomes from different sources have different effects on consumer use of health care. Compared with low income (from wage and salary) consumers, high income individuals may be more aware of their health and able to use more health services in terms of quantity or quality. Social transfer income is negatively associated with the expenditures. This suggests that social welfare recipients have limited financial ability of using health-care services. The more income they receive from social welfare, the lower their socio-economic status is.

Income from other sources has a positive coefficient, although it is only statistically significant at the 0.15 level. Because these coefficients can be interpreted as income elasticities, the income elasticity of medical expenditures are 0.007 for wage income, -0.004 for social transfer income, and 0.001 for other incomes. The small magnitudes of the estimated income elasticities imply that consumer demand for health care is not highly sensitive to income changes. These results are consistent with those of previous studies. Several studies such as Freiman et al. (1993) and Jones and Salkever (1995) reported that income was not a significant factors in explaining the consumer demand.

All three payment shares have significant coefficient with expected signs. The higher proportion of the expenditures paid from out-of-pocket, the lower medical expenditures would be. The opposite holds for the payment share of private insurance and social welfare programs. One percent increase in payment share of out-of-pocket results in about 0.004% increase of the total expenditures. The total expenditure increases about 0.04% for one percent increase in the share of private insurance, and 0.03% for one percent increase in the share of social welfare programs. These results may imply that payment shares are a powerful means in controlling medical expenses. Because previous studies used insurance (or copayment) indicator (dummy) variables, no comparison can be made on these findings.

Increasing payment share of out-of-pocket is useful for keeping down health care costs, but may cause a lack of access to affordable quality health care for some people especially indigent people. A higher payment share of insurance policy and social welfare programs can make health care more accessible to consumers, and increase the medical expenditures. There is an optimal combination of payment shares to meet the demand for health care. At this combination level, consumers can maximize the health outcomes from using health-care services with a given level of medical expenditures or the expenditures can be minimized for a given level of health outcomes.

Health indicators are significant predictors of medical expenditures in positive direction. All the estimated coefficient for ambulatory visits, prescribed medicines and their respective quadratic terms are positive and statistically significant at the 0.01 level. This implies that the medical expenditures increase at an increasing rate as health status becomes poor. This

Table 2

Sample Means of Medical Payment Shares and Health Care Use by Race and Educational Groups

Groups	PW_1 (%)	PW_2 (%)	PW_3 (%)	HS_1 (n^a)	HS_2 (n)	HS_3 (%)
Race:						
White	51	30	16	10	7	12
Black	37	25	34	8	7	14
Other	47	25	23	7	4	10
Education:						
ED_1	46	15	35	12	11	16
ED_2	47	28	21	9	7	13
ED_3	51	36	9	9	5	9

[a] n=number of times

is reasonable because health care services are more desirable and expensive when health status becomes poor. Marginal utility of using health care increases when more ambulatory visits and prescribed medicine services are used.

Age also has a positive coefficient and is statistically significant at the 0.01 level. This implies that elderly persons require more health care, including ambulatory visits, prescription medicines, and inpatient stays. This is consistent with commonly assumptions of the positive correlation of health status depreciation rates and age. Leibotwitz et al. (1985) and Freiman et al. (1993) reported the similar results.

Other demographic variables including educational levels, gender, and race have statistically significant coefficients at the 0.05 or higher levels. Educational level is positively associated with medical expenditures. Individuals with more years of education may use higher quality and more expensive health-care facilities than do the individuals with less years of education, other things equal. This may suggest that these people own higher human capital, and life may be more valuable to them. Education was often found to be a relevant variable determining health care demand, but the results are mixed in the literature.

Gender is also significantly associated with total medical expenditures. Although they use health services more often than do the males (Table 2), females spend less on health-care services. This fact may suggest that males are more likely to delay their disease treatment and females are using more preventive health care. White and other racial groups have a lower expenditure than blacks. This may be due to the fact that the possibility of using inpatient stays is higher for black individuals (Table 2). Coefficients of regional dummy variables are statistically significant representing the effects of regional differences of health care quality and availability on the expenditures.

Conclusions

This paper investigated the impacts of income and payment sources on consumer medical expenditures using an economic model. From the 1987 National Medical Expenditure Survey, the estimation results were statistically satisfactory and provided valuable information about consumer health seeking behaviors. A thorough comparison of the findings with those of previous studies could not be provided either because of data differences or different methods and variables used.

Income and medical payments from different sources affected consumer health seeking behaviors

Table 3
Parameter Estimation Results of Medical Expenditure

Variables	Parameters	t-ratios
$Ln(IN_1)$	0.007**	7.26
$Ln(IN_2)$	-0.004**	-4.56
$Ln(IN_3)$	0.001	1.39
$Ln(PW_1)$	-0.004*	-2.16
$Ln(PW_2)$	0.038**	29.18
$Ln(PW_3)$	0.028**	15.98
$Ln(HS_1)$	0.539**	104.91
$Ln(HS_2)$	0.154**	28.91
$Ln(HS_1)^2$	0.045**	83.33
$Ln(HS_2)^2$	0.013**	24.61
HS_3	1.969**	102.54
AGE	0.008**	24.43
ED_1	-0.033*	-1.95
ED_3	0.023	1.71
MALE	0.041**	3.43
WHT	-0.076**	-4.73
NWB	-0.069*	-2.37
FS	-0.006	-1.43
NE	-0.061**	-3.19
MW	-0.127**	-6.97
SOUTH	-0.072**	-4.15
CONT	4.866**	119.33
R-Square	0.74	

** and * denote statistically significant at the 0.01 and 0.05 significance levels, respectively.

differently. Compared with high wage income consumers, low income consumers and welfare recipients had a lower level of medical expenditure. In addition, the findings suggest that treating income as one variable as employed in some previous studies may be inappropriate. For policy implications, consumer socioeconomic status should be accurately measured by incomes from different categories. Although income had a small impact on medical expenditures, the results strongly suggest that economic disadvantaged consumers behave differently in seeking health care services from others. If they are targeted in disease prevention, incomes from different sources serve as better criteria to identify them.

Shares of payment were clearly related to medical expenditures. The trade-off between public health and societal cost existed. Finding a nearly optimal combination of payment shares was essential for efficacy and efficiency of social welfare programs and enhancing public-health status. The elasticity of payment share of private insurance was the largest in magnitude among the three payment shares. Therefore, to control health-care costs, policies of private insurance companies are the most important factors. Increasing out-of-pocket payments has little affect on medical expenditures. This conclusion is also justified by the small magnitude of salary income elasticity of the expenditures.

Since expenditures increased at an increasing rate as usage of the ambulatory visits, prescribed medicine services increased, the effectiveness of using these services may decline at a certain level of the use. For example, when an individual's health status becomes so poor that he/she needs these services too often, inpatient stays may be a better means for this individual in terms of cost effectiveness. These findings suggest preventive health services may be more cost effective for individuals with better health status. The earlier the diseases are detected and prevented, the more cost-effective the preventive services are.

The relationship between demographic variables and expenditures revealed priorities for public-health policies. Other things equal, males spend more on using health services than do females. This may imply that males use health services until disease symptoms appear. If this is the case, encouraging men to use more preventive care services may be an alternative to improve the effectiveness of social health-care programs. For example, women may be currently using more preventive care services such as STD screening and testing. To further enhance the efficiency of STD prevention programs, strategies of STD screening and testing for men should also be emphasized.

Population groups of black and elderly were heavy users of health care especially inpatient care. They also had the highest social welfare payment shares. Containment of medical costs for these groups is essential for relieving societal financial burdens on health care. Encouraging them to use more ambulatory visits, prescribed medicine, and other preventive services may be the appropriate means to lower the medical cost.

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Consumer Interests Annual *Volume 42, 1996*

Consumers' Preferences for Health Care Reform

Using the 1992 Health and Retirement Study, this study examines consumers' preferences for various health care reform proposals. Young, non-whites, self-employed and those who reside in the Northeast favor national health insurance. Older males tend to favor extending Medicare to cover nursing home and home health care. Those with poor health and low-income are likely to favor having subsidized nursing home insurance. Self-employed are less likely to support tax credits for health insurance premiums

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Introduction

Proposals for transforming the financing of our nation's health care system are more the standard than the abnormal. We are currently questioning whether to modify the radical health care financing reforms of the 1960's, Medicare and Medicaid. We continue to debate the feasibility of a universal health care plan for all persons in the nation. While there is generally a consensus that something must be done, the nature of the necessary reform is unclear.

Health insurance coverage is required if one wants to obtain reasonable access to medical services for unexpected medical crises, and for everyday health concerns. However, inordinate cost of health insurance and medical services lead to dependency on employer-provided health insurance coverage, and the federal and state Medicare and Medicaid programs. Nonetheless, increasing number of persons are finding themselves excluded from access to medical services (Posey, 1995). This is, in part, due to the inability of employers or federal and state governments to secure financial resources that shoulder the burden of financing access to rising health care costs. What options are available?

In September 1995, proponents of Medicaid reform suggested that it is possible to reduce the federal government financing obligations by $182 billion via reform of this program (Haveman, 1995). The changes suggested are to (1) give nursing homes more flexibility to discharge senior citizens without their consent from nursing homes, (2) allow states to require spouses of nursing home residents to sell their homes, cars and other assets to finance care, (3) require adult children to pay for the nursing home care of their parents, and (4) annual federal and state block grants that replace the current system of open-ended federal matching and encourage states to come up with innovative ways of providing services for low income persons.

At the same time there are efforts to reform Medicare. Dollar magnitudes such as $270 billion in savings over a seven-year period is the guesstimate for Medicare reform (Pianin & Rich, 1995). The proposed reforms consider a five-prong strategy, including (1) mitigating the growth of reimbursements to medical providers, (2) increasing the premiums for physician insurance and increasing annual deductibles of Medicare beneficiaries, (3) allowing insurees to switch to managed care plans, (4) increasing the age of eligibility from 65 to 67, and (5) income related premiums, with persons having incomes greater that $100,000 paying more.

Proposals for the complete overhaul of our health care system are a secondary consideration. Discussions of the Clinton Health Security Act (1994) and its financing costs made the nation aware of the potential tax burdens of a major health reform, estimated to range from 8 to 29 billion dollars (Long & Rogers, 1993). Many legislators came to the conclusion that we need more modest and intermediate strategies of reform, i.e., state health reform. Thus, persons in individual states are providing the test cases for the evaluation of "new" health care financing strategies, with states implementing various forms of managed care and health care rationing systems.

To what extent are consumers in support of health care reform? What factors influence their preferences for different types of health care reform? Are these questions simply answered by a response such as those with the greatest health care needs (those with limited access to care) are those who want more reform? Or, is another simple response that those who will pay higher taxes will be less likely to support reform?

We know very little about the preferences of individual consumers regarding health care reform. In this paper we seek to understand those factors most important in influencing consumers' preferences for four types of health care reform: (1) universal coverage (national health insurance), (2) income related fees for Medicare-covered services, (3) government subsidized nursing home insurance, and (4) health insurance premium tax deductions and subsidies. We use national data from the 1992 Health and Retirement Study and ordered probit regression models to understand these issues.

Proposed Health Care Reform Proposals

Hundreds of health reform proposals have been presented before Congress in the last three years (Grossman, 1994). Some presented the ideas of (1) completely restructuring the health care financing system, (2) getting rid of the piece-meal system of financing at the federal, state, local, and household levels, and (3) providing universal care for all citizens. The Clinton plan was such a proposal. Reform of this type (supported by a progressive tax structure), facilities a door of access to care for all citizens, enforces an equitable process, yet is expensive to finance.

Alternatively, reform proposals have addressed the needs of particular populations (e.g., the elderly). The primary focus of the Pepper Commission proposal was expansion of catastrophic coverage (including nursing home care) for the Medicare insured (Pepper Commission, 1994). More recent Medicare reform proposals have focused on vertical equity by premiums and copayments for high income consumers, with out-of-pocket payments reflecting a similar share of income for all Medicare patients.

Tax incentives are a mechanism to encourage enrollment in health plans,. Nonitemized tax deductions for individual premiums were part of the Cooper, Gramm and Michel proposal (Grossman 1994). Historically, tax subsidies for employer premiums have been used to encourage employer-based insurance. Recent health proposals have placed limits on this type of employer subsidy, including the Chaffee, Cooper, an Clinton proposals (Grossman, 1994).

Methods

Data and Sample

The data for this study are from the 1992 Health and Retirement Study (HRS). It is a national longitudinal study that focuses on labor force participation, pensions and health insurance, health, retirement, housing and mobility, family structure, and economic status of 12,656 individuals from 80,000 households. The Institute for Social Research at the University of Michigan and the National Institute on Aging collected the data (Juster & Suzman, 1994). The study oversampled those aged 50-61 and Afro-Americans.

The sample is from the experimental module J, Health Risks. It is one of the ten modules that try to measure analytically important concepts such as physiological measurements of health and functioning status, parental wealth, and occupational injuries. These modules contain information on about 500 to 800 randomly selected households. The current study examined 434 households. The data were weighted for analysis to represent the general population.

The data also provide a unique opportunity to examine consumer preferences for health care reform. Respondents were asked whether they are in favor, neutral, or opposed to each of these four proposals: 1) A national health insurance program in which all Americans are covered by health insurance, with costs paid by tax dollars, 2) Extension of Medicare to cover all costs of nursing home care and home health care, with Medicare recipients the full cost as additional fees proportional to income, 3) A government subsidy from general tax revenues to make the cost of nursing home insurance more affordable to the average citizen, and 4) A plan in which health insurance premiums can be deducted from or taken as a credit against income taxes, thus increasing and decreasing tax burdens, respectively. These four proposal options capture features of many recent health reform bills.

Variables

The regression model includes five major explanatory factors: demographic, health status, health insurance, economic, and work-related. Table 1 describes variable measures. The demographic variables are age, gender, marital status, education, race, and region.

We hypothesize that ones preferences for health reform are, in pat, influenced by ones projected need for medical services. Current health status is one indicator of need. In this paper, both subjective and objective measures reflect health status. Self-reported health is a subjective indication of general health status and measured by two dummy variables, one for a rating of excellent and a second for a rating of good or very good. Responses for these ratings are compared with a health rating of poor or fair.

Table 1
Measurement of variables

Variables	Measurements
Dependent variables	
National health insurance program	1 if favor, 2 if neutral, and 3 if opposed
Medicare extension	1 if favor, 2 if neutral, and 3 if opposed
Nursing home insurance	1 if favor, 2 if neutral, and 3 if opposed
Tax credit	1 if favor, 2 if neutral, and 3 if opposed
Independent variables	
Demographic variables:	
Age	age in years
Gender	1 if male, 0 if female
Marital status	1 if married, 0 otherwise
Education	number of years of completed education
Race	1 if white, 0 otherwise
Region	1 if Northeast, 2 if Midwest, 3 if West, and 4 if South
Health status:	
Self-reported health	1 if poor, 2 if fair, 3 if good, 4 if very good, 5 if excellent
# of medical condition	total number of conditions (high blood pressure, diabetes, malignant tumor, chronic lung disease, heart problem, and arthritis)
Mental health	an index created using responses to questions regarding the level of depression, restlessness, happiness, loneliness, and sadness
Social health	an index created using responses to questions: people are unfriendly, people dislike me, and I could not gel along
Nursing home	chances to live in a nursing home, from absolutely no chance (0) to absolutely certain (10)
Health insurance:	
Gov.-insurance	1 if covered by federal health insurance program, such as Medicare, Medicaid, CHAMPUS, VA or military program, 0 otherwise
Retirees-insurance	1 if expect to have health insurance after retirement, 0 otherwise
Private insurance	1 if covered by Medigap, supplemental coverage, or long-term care insurance purchased privately
Economic Resources:	
Income	total annual household income in 1992
Other liquid asset	sum of dollar values in checking/savings, money market funds, CDs, govern. savings bonds, and T-bills
Nonliquid asset	dollar value of vehicles, IRA and Keogh, bonds and mutual funds, and real estate excluding homes
Pension	1 if covered by pension/retirement plan, 0 otherwise
Work-related variables:	
Employment	1 if employed, 0 otherwise
Self-employed	1 if self-employed, 0 otherwise
# laid off	# times laid off previously

The objective measures of health include assessments of physical, mental, and social health.[4] The sum of diagnosed medical conditions reflects the respondents' physical health condition (see Table 1 for details). We created an index for mental well-being using information about the level of depression, restlessness, happiness, loneliness, and sadness. Social health is measured by an index that is based on responses to three survey questions: people are unfriendly, people dislike me, and I could not get along.

We also include a measure of the respondent's perception of future health needs and medical services. This is a measure reflecting a person's perception of a future need to use nursing home services, We use a self-assessed rating that ranges from zero (no chance) to 10 (absolutely certain).

Health insurance coverage is usually essential to obtaining access to medical care. Thus, we include measures of coverage to capture how current levels of medical access impact on perceptions of health reform. Three dummy variables measure health insurance coverage: (1) coverage by federal health insurance programs such as Medicare, Medicaid, CHAMPUS (Civilian Health and Medical Program for the Uniformed Services), VA or military program, (2) availability of health insurance after retirement, and (3) ownership of supplemental health insurance such as Medigap and long-term care insurance.

We include measures of other economic resources in our model. They are household income, other liquid assets, nonliquid assets, and availability of pension benefits. Household income is the total income in 1992. Other liquid assets include the dollar value of checking and savings, money market funds, CDs, government savings bonds, and T-bills. The dollar value of IRAs and Keoghs, bonds and mutual funds, and real estate excluding homes compose the measure of nonliquid assets. Pension benefits are measured by the

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enrollment in pension plan(s), one if enrolled and zero otherwise. Measures of future economic earnings potential are captured in two work-related variables -- employment status and self-employed. Employment status is a dummy variable that equals one if the person is employed and zero otherwise. Self-employed is also a dummy variable, one if self-employed and zero if not.

Analysis

The dependent variables have three levels of responses; favor, neutral, and opposed. When there is an ordering to the categories associated with the dependent variable, one extension of the probit model, ordered probit, is commonly used. The ordered probit model assumes that there are cutoff points in an underlying index (Z) which define the relationship between the observed and unobserved dependent variables. The model is built around a latent regression in the same manner as the binomial probit model. The following is a specification of the ordered probit model. $Y^* = \alpha + \beta x + \epsilon$. Y^* is unobserved. What we observe is $Y = 0$ if $Y^* \leq 0$, $Y = 1$ if $0 < Y^* \leq \mu_1$, $Y = 2$ if $\mu_1 < Y^* \leq \mu_2$, then $Y = J$ if $\mu_{J-1} < Y^*$. The μs are unknown threshold parameters to be estimated with α and β (Greene, 1993; Pindyck & Rubinfeld, 1991).

Results

Sample Characteristics

The mean age for the sample is 56 and mean education is 12 years. About half of the sample is male, 60 percent are married, and over 70 percent are white. About 45 percent of the sample lived in the South. The respondents also reported at least one medical condition and the mean score for the expectation to live in a nursing home is 4.06 on a scale of zero to ten. Government provided health insurance such as Medicare, Medicaid, CHAMPUS, or VA covers over 20 percent of the sample. About a half of the sample expect to have health insurance coverage after their retirement or currently have coverage by their previous employer's insurance. Supplemental health insurance coverage, such as Medigap, covers 18 percent of the sample. Mean income is about $42,000, while the mean values of other liquid assets and non-liquid assets are about $17,000 and $100,500 respectively. About 36 percent have pension coverage, 64 percent are working for wages and salaries, and 23 percent are self-employed.

General Opinions on Four Health Reform Proposals

The distributions of the dependent variables are presented in Table 2. Approximately 50 percent of the respondents favored a national health insurance program paid by tax dollars. A majority (53 percent) also favored extended coverage for nursing hoe and home heath care with Medicare recipients paying the full cost as additional fees proportional to income. Over 70 percent of the respondents favored having a government subsidy from general tax revenues to make the cost of nursing home insurance more affordable, and also a tax credit for health insurance premiums paid.

The proposal receiving the most opposition was the extension of Medicare to cover long term care services, with partial financing by seniors. Almost one-fourth of the sample opposed this type of reform. In contrast to our recent experience of inability to obtain Congressional support for implementing the Clinton health reform proposal, the data n table 3 report that less than 20 percent of respondents opposed national health insurance.

Table 2
Distribution of the dependent variables

Variables/Choices	Favor	Neutral
National health insurance	234 (53.9)[a]	119 (27.4)
Medicare extension	230 (53.0)	96 (22.1)
Nursing home insurance	310 (71.4)	69 (15.9)
Tax deduction of insurance premium	325 (74.9)	69 (15.9)

Note: [a] Numbers in parentheses represent percentages

Factors Associated with Consumers' Opinions on Four Health Care Reforms

Results of the ordered probit models are presented in Table 3. Demographic factors and work-related variables explain preferences for national health insurance. Current health status, insurance status, and financial status were not significantly related to support for national health insurance. Older respondents were less likely than younger ones to favor national health insurance programs. Whites were less in favor of having national health insurance than nonwhites. Respondents who resided in the Northeast region were more likely and those in the Midwest were less likely than Southern residents to favor national health insurance. Hired workers were less likely than the unemployed to support national health insurance programs. Self-employed workers were more likely to favor having it.

Medicare Extension. Demographic and health factors account for differences in attitudes about extensions of Medicare. As expected, older respondents were more likely than younger ones to support extension of Medicare coverage to cover the costs of nursing home and home health care. Male respondents were more likely than females to support the extension of Medicare. As the chances of nursing home residence increase, the

Table 3

Factors Associated with Consumers' Opinion on Four Health Care Reform Proposals: Results of Ordered Probit

(n = 434)

Variables	National health insurance	Medicare extension	Nursing home insurance	Tax credit
Demographic:				
Age	-0.05 (0.02)**	0.04 (0.02)*	-0.002 (0.02)	0.02 (0.02)
Male	0.35 (0.22)	0.35 (0.21)*	-0.38 (0.25)	-0.04 (0.25)
Married	-0.09 (0.23)	-0.19 (0.23)	0.29 (0.26)	0.25 (0.28)
Education	-0.001 (0.04)	0.03 (0.04)	-0.004 (0.04)	0.04 (0.04)
White	-0.52 (0.25)**	-0.34 (0.24)	-0.33 (0.28)	0.24 (0.27)
Region				
Northeast	0.75 (0.30)***	0.02 (0.28)	0.46 (0.34)	0.40 (0.34)
Midwest	-0.40 (0.25)*	0.14 (0.25)	-0.32 (0.27)	0.17 (0.30)
West	0.37 (0.30)	0.01 (0.28)	0.15 (0.35)	-0.11 (0.37)
(South)				
Health status:				
self-rep. health				
excellent	0.55 (0.35)	0.17 (0.35)	-0.58 (0.40)	0.35 (0.44)
good	0.11 (0.28)	-0.27 (0.28)	-0.34 (0.33)	-0.21 (0.33)
(poor/fair)				
# medical cond.	0.06 (0.10)	-0.14 (0.10)	-0.13 (0.12)	-0.04 (0.12)
Mental health	0.06 (0.10)	-0.11 (0.10)	-0.14 (0.13)	-0.28 (0.13)
Social health	-0.16 (0.17)	0.03 (0.17)	0.22 (0.20)	0.16 (0.19)
Nursing home	-0.03 (0.13)	0.07 (0.03)**	0.08 (0.03)**	0.03 (0.04)
Health insurance:				
Government ins.	0.14 (0.28)	-0.14 (0.27)	0.20 (0.31)	-0.09 (0.32)
Postret. ins.	-0.17 (0.24)	-0.28 (0.23)	0.07 (0.26)	0.25 (0.28)
Supplement. ins.	0.02 (0.26)	0.36 (0.27)	0.05 (0.30)	0.43 (0.30)
Economic Resources:				
Income	1.65E-6 (3.91E-6)	3.41E-6 (4.31E-6)	-3.18E-6 (4.34E-6)	2.61E-6 (5.87E-6)
Other liquid asset	-3.15E-6 (2.43E-6)	4.18E-6 (3.21E-6)	4.46E-6 (3.05E-6)	8.55E-6 (5.84E-6)
Non-liquid asset	-3.99E-7 (4.10E-7)	-1.79E-7 (4.32E-7)	-9.04 E-7** (4.59E-7)	1.83E-7 (7.21E-7)
Pension	-0.12 (0.27)	0.18 (0.27)	0.23 (0.30)	0.15 (0.34)
Work-related:				
Employed	-0.61 (0.29)**	-0.12 (0.28)	0.09 (0.31)	0.31 (0.35)
Self-employed	0.54 (0.26)**	-0.23 (0.26)	-0.002 (0.30)	0.92 (0.33)***
Intercept 1	3.11 (1.85)	-1.85 (1.82)	1.20 (2.11)	0.01 (2.16)
Intercept 2	1.45 (0.12)	1.05 (0.09)	1.08 (0.12)	1.28 (0.15)

Note: Numbers in parentheses are standard errors.

* significant at .1, ** significant at .05, *** significant at .01

likelihood of supporting an extension of Medicare to cover nursing home and home health care also increases.

Nursing Home Insurance. The one health reform that has financial status as a significant determinant of preferences is nursing home insurance. As shown in Table 4, the likelihood of favoring a government subsidy from general tax revenues to make the cost of nursing home insurance more affordable to the average citizen increases as expectations of living in a nursing home rise. Those with high non-liquid assets were less likely to support government subsidized nursing home insurance.

Tax Credit. Only one variable was significant in the model of tax credit. Contrary to our expectation, being self-employed is negatively associated with the likelihood of supporting the tax credits for health insurance premiums.

Discussion

The current crisis in health care financing and delivery calls for both various incremental health care reforms to make it more cost-effective and equitable (Lundberg, 1991) and more radical reforms that lead to a national health insurance program (Fuchs, 1991). To enhance our understanding of consumers' preferences for changes in the health care system, this study identified profiles of consumers who favored various proposals for health care reform. Demographic factors, health status, financial status, and work-related factors shape opinions about health care reform. It was surprising to find that after controlling for these factors, health insurance status was unrelated to preferences for reform of our health care financing system. Thus, there are no differences in preferences for national health reform between consumers who perceive their own insurance policies are adequate and those whose policies are inadequate in meeting their personal health care needs. This finding intimates a global value system within the general community of health care consumers that requires further investigation.

The limited role of health status in shaping opinions about health care reform is also instructive. Proponents of the theory of adverse selection in insurance choice conclude that demand for health insurance is greater among those most in need of care, i.e., those whose health is greatly depleted or at significantly high risk of depletion (Phelps, 1992). We found that health status, measured by expectations of nursing home use only, significantly affects the desire for health care reform.

Extensions of Medicare and nursing home insurance are the only two types of health care reform that this measure of health status affects. Thus if consumers perceive they will need nursing home care, they favor focused reform, those that increase access to nursing home care with either full or partial federal subsidies.

It is important to emphasize the role of non-liquid assets as they relate to preferences for nursing home insurance. Persons with limited liquid or housing assets are most desirous of some type of nursing home insurance reform. The high cost of nursing home care and limited coverage by Medicare makes this service inaccessible to those with low income. Current reforms of Medicaid illustrate the risk this low income population faces. If the proposed legislation passes, this population risks loss of the families' housing to secure nursing home access.

If, as shown in Table 2, there is widespread support of national health care reform, why is reform so difficult in practice? Is the political process an obstruction to meeting community health needs? Are political representatives effective advocates for the general populace? Is the general populace inadequately informed about the implications for resource allocation when practitioners implement desired programs? Answers to these questions should clarify this apparent divergence between consumer preferences and health care reform outcomes.

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Long-Term Care Insurance: Is State Regulation Adequate?

Private insurance is one option to prepare for the risk of catastrophic long-term care expenses. However, the product as well as the sales and marketing practices associated with it have been highly criticized. One frequently recommended remedy is stronger state regulation. This paper examines state adoption of the National Association of Insurance Commissioners' models in long-term care insurance legislation and regulation.

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In a *USA Today*/CNN/Gallup poll of 1,011 adults, 66% worried about being able to pay for long-term care for themselves or a relative (Keen & Goodavage, 1993). With nursing home costs averaging $35,000 per year (Congressional Budget Office (CBO), 1991) and even part-time home health care costs of $5,000 to $10,000 annually (Doyle, 1992), it is not surprising that people are concerned.

Private long-term care insurance (LTCI)[2] is one way to prepare for the financial risk of catastrophic LTC costs. A little-known product until the late 1980s, the number of policies in force more than doubled from 1987 to 1993 (Families USA, 1993; Van Gelder & Johnson, 1991). Yet only about 4% of the elderly have purchased LTCI (Cohen, Kumar, McGuire, & Wallack, 1991) and it pays only one to two percent of aggregate nursing home care costs (Pauly, 1990; Pepper Commission, 1990).

There may be several plausible explanations for the relatively low demand for LTCI. However, a common one is the belief that, due to restrictions and limitations, policies may not pay claims. Although states have passed regulation and/or legislation to address these concerns, critics claim that state action has been inadequate.

The purpose of this research was to determine the rate at which states have incorporated NAIC standards in legislation/regulation of LTCI between 1986 and 1995. The NAIC Long-Term Care Model Act and Regulation were chosen as the standard for comparison since they were written specifically to serve as models for states. Since reviewing the insurance legislation and regulation of every state appeared to be an insurmountable challenge, the author surveyed state insurance departments instead. This paper discusses the results of those surveys as well as the issues surrounding federal versus state regulation of LTCI.

Review of Literature

Consumers will be unlikely to buy LTCI if they believe it to be an inferior product. In the 1980s problems were identified in the product as well as how it was marketed; state regulation was considered inadequate to address problems. Criticisms of the product continue in the 1990s even though many companies changed both their policies and their sales practices.

Policy Deficiencies

A major concern of critics of LTCI has been that the policies sold are so restrictive that consumers rarely qualify to collect benefits. Rice, Thomas, and Weissert (1989) concluded that due to policy restrictions, 61% of policyholders who entered a nursing home would not collect any benefits from LTC policies marketed in 1988. Studies consistently identified significant restrictions in LTC policies marketed in the 1980s, including provisions requiring prior hospitalization, provisions requiring prior skilled care to receive other levels of care, and exclusion of coverage of Alzheimer's disease (Rice, Thomas, & Weissert, 1989; U.S. GAO, 1987; Wiener, Ehrenworth, & Spence, 1987).

A related concern about 1980s LTC policies was that they contained significant benefits limitations. Frequently-cited problems included policy maximums (for example, limiting coverage to less than four years), coverage of skilled care only, and minimal coverage for home health care. Lack of inflation adjustments and high premiums were also significant concerns (Rice, Thomas, & Weissert, 1989; U.S. GAO, 1987; Wiener, Ehrenworth, & Spence, 1987).

Sales and Marketing Abuses

In 1989, the U.S. GAO (1989) identified the complaints state received most frequently about LTCI as sales agents misrepresenting coverage, insurers' reported failure to pay claims, and false or deceptive advertising or sales practices. Critics regularly cited as major concerns post-claims underwriting (companies decide whether a person's health status disqualifies them for coverage after a claim is filed rather than when an application is processed) and cancellation of policies due to a change in health status or age (Rice, Thomas, & Weissert, 1989; U.S. GAO, 1987; Wiener, Ehrenworth, & Spence, 1987). *Consumer Reports'* ("An empty promise," 1991, p. 427) investigative reporters described LTCI agents' sale presentations as "misleading and confusing." And, in 1992, the U.S. GAO (1992) reported that, except for identifying Medicaid recipients, companies do little to prevent the sale of LTC policies to low-income elderly.

Regulation of LTCI

Critics have blamed many of the shortcomings of LTCI on inconsistent and inadequate regulation. Since insurance is regulated at the state rather than the federal level, the National Association of Insurance Commissioners (NAIC) develops model insurance legislation and regulation to facilitate a certain degree of uniformity among the states.

The NAIC first developed models for LTCI in 1986. Due to the industry's rapid growth, NAIC has continually revised its LTC models and the models have increasingly moved beyond provisions that insure consumers' basic rights in LTCI. For example, the first model provisions prohibited policy cancellations because of the policyholder's age or deteriorating health, required insurers to give policyholders an outline of coverage and a 30-day free look period in which to return the policy for a full refund, and limited to six months the period for exclusion of coverage of preexisting conditions. Only one 1986 provision sought to expand the definition of what LTCI had been up until that time -- primarily insurance that paid for stays in a skilled nursing home following hospitalization. That NAIC provision prohibited LTCI from offering coverage for skilled care only.

With each revision in the NAIC models, however, new provisions more often focus on standards related to sales abuses and expanding coverage and/or removing restrictions which limit coverage. For example, the 1990 NAIC (1990) amendments covered three areas: post-claims underwriting, home health care, and inflation protection. In 1991, NAIC (1991) added standards related to marketing LTCI.

Uniform adoption of the NAIC models into state laws and regulations throughout the U.S. could force all companies to improve their products as well as their marketing practices. However, the NAIC models are unlikely to have a significant impact on the industry if states don't adopt and enforce them. While some companies may not wait for state legislative action before revising policies to comply with the NAIC models, others no doubt would.

How rapidly have states adopted the NAIC models? The NAIC tracks state action and reported that in 1989 18 states had in place legislation that incorporated the model; another 11 had passed related legislation. By 1995, 43 states had adopted legislation based on the NAIC model; another seven had passed related legislation. Regulations have been written at a somewhat slower rate. In 1989, only eight states had regulations based on NAIC's model but five more had pending regulations. By 1995, 36 states had regulations based on NAIC's model; seven other states had regulations partially based on the model (NAIC, 1989, 1995).

Data Collection Methods

The GAO (1989) surveyed state insurance departments in May 1988 to assess the extent to which states had adopted legislation and regulation implementing the NAIC LTCI standards. The GAO's primary data sources were mailed surveys and legislative materials returned by state insurance departments. All but one state (Idaho) responded. The author requested similar data from state insurance departments in 1989-90 and again in 1991 by mailing surveys composed primarily of open-end questions. A total of 48 states responded in both survey years. To create the 1995 data, the author used data collected by the NAIC's model reporting service, supplemented by telephone surveys of state insurance department officials.

Results

Although the NAIC models contain numerous provisions, the GAO study concentrated on seven. Table 1 reports the status of state legislation/regulation on those seven provisions as determined by the GAO in 1988 and by the author in 1989-90, 1991, and 1995. Table 1 also reports for 1991 and 1995 the author's assessment of state action on three provisions added to the NAIC models in 1990.

The provision most rapidly incorporated into most states' legislation/regulation is a "free look" period. Within a year of the NAIC adding the requirement to its

Table 1
State Adoption of Selected NAIC Model Act and Regulation Provisions

	States Adopting Legislation/Regulation From NAIC Model								
	1988[a]		1989-90		1991		1995		
NAIC Model Act and Regulation	(n-25)		(n=48)		(n=48)		(n=51)		
Provision and Year Approved	n	%	n	%	n	%	n	%	
Cannot offer coverage for skilled care only (1986-87)	11	44%	28	58%	37	79%	46	90%	
Must offer a 30-day "free look" period (1986-87)	19	76	37	77	46	98	46	90	
May not exclude Alzheimer's Disease (1987)	7	28	29	60	39	83	48	94	
Individual policies must have expected loss ratio of 60% (1987)	18	72	25	52	33	70	37	72	
Individual policies must be guaranteed renewable or noncancellable (1987)	6	24	20	42	34	72	45	88	
Cannot require prior hospitalization to be eligible for benefits (1988)	4[b]	16	26	54	32	68	46	90	
Cannot require a higher level of nursing home care to qualify for a lower level of care (1988)	2[b]	8	24	50	31	66	39	76	
Should determine the applicant's health condition before writing the policy (1990)	--	--	--	--	11	23	39	76	
Must meet minimum standards for home health care (limit restrictions on eligibility) (1990)	--	--	--	--	16	34	41	80	
Must offer inflation protection option (1990)	--	--	--	--	16	34	41	8	0

[a]Source: U.S. GAO, 1989.

[b]Not in the NAIC model at the time of the survey.

model, three-fourths of all reporting states had a requirement that consumers must have at least 30 days in which to examine a policy and return it for a full refund. Virtually all of the states (46) had adopted the provision by 1991. Acceptance of this provision may be high since this protection is included in the general insurance laws of some states.

Other provisions were not incorporated into state legislation/regulation as rapidly in the first year. In 1988, one year after the provision was added to the NAIC model, less than one-third of states specifically prohibited policies from excluding Alzheimer's disease from coverage. However, by 1991, 83% included that provision, important because estimates are that as many as 50% of nursing home residents may have Alzheimer's disease (U.S. GAO, 1987). By 1995, 48 states prohibited exclusion of Alzheimer's disease. Compared to 1988, in 1991 over five times as many states required policies to be guaranteed renewable or noncancellable. In 1989-90, just one year after the provisions were added, at least one-half of states already prohibited conditioning eligibility of benefits on prior hospitalization or eligibility for care at the intermediate or custodial level on prior receipt of skilled care. Rice, Thomas, and Weissert (1989) found that either restriction reduced a policyholder's chances of collecting benefits from a LTC policy by one-third. NAIC's restriction on prior hospitalization as an eligibility standard had been accepted in 46 states in 1995; however, only 39 states addressed conditioning eligibility of benefits on having received a higher level of institutional care.

While initial acceptance of the three 1990 NAIC model provisions was slow, most states had incorporated them by 1995. In 1991, just over one-third of states had added the 1990 NAIC provisions on home health care and inflation protection compared to 80% in 1995. Only 23% had incorporated a provision on post-claims underwriting in 1991 but the rate jumped to 76% by 1995. These first-year adoption rates are lower than those for any of the 1987 or 1988 provisions. However, one might expect more opposition within states to newer NAIC provisions since they focus on raising the standard of conduct for companies and expanding the scope of coverage of LTCI. Also, states may simply have had difficulty in changing their state legislation/regulation as rapidly as NAIC has changed its models.

Summary, Limitations, and Implications

Like most research, this paper has several limitations. It may not provide an accurate picture of the protections available to purchasers of LTCI. Even if states *base* their legislation/regulation on the NAIC models, the final product may not include all of NAIC's provisions. For example, the Health Insurance Association of America (HIAA, 1993) reported that of the 35 states that had written home health care regulations, 27 differed in some way from the NAIC standard. Also, legislation/regulation is not effective if it is not enforced. AARP (1992b) concluded that many states have only limited capacity to regulate LTCI; they cited inadequate staff and data reporting and management information systems. In most states, it is rare that staff are identified with LTCI as their sole responsibility.

The data indicate that states have included some NAIC model provisions more rapidly than others but that the majority of states have incorporated the provisions into their state legislation/regulation within three to four years. Is that an acceptable delay? The answer no doubt depends on one's perspective. A consumer who searches in vain for a product to meet his/her needs or buys a policy that offers only limited coverage or doesn't pay legitimate claims would no doubt describe state action as too slow. Insurers who must limit the number of states in which they sell because of differences across states or who must modify their policies with each new state action would probably take a different point of view.

Clearly NAIC standards have the greatest impact when they are promptly incorporated into many states' legislation and regulation with little variation. Since the evidence suggests that is not necessarily the result, discussion of federal regulation is appropriate. Also, because Medicare supplemental insurance and LTCI are both marketed primarily to the elderly, parallels between the two are inevitable. After over 20 years during which Medicare supplemental insurance was regulated primarily at the state level, in 1991 federal legislation added significant new provisions to protect consumers from sales and marketing abuses (AARP, 1992a).

Thus, one perspective is that continued state regulation of LTCI simply postpones inevitable federal regulation. However, a forceful argument against federal legislation is that LTCI is a relatively new product; Medigap policies have been marketed for over 20 years compared to less than 10 for LTCI. If the market for LTCI is still evolving, establishing federal standards prematurely might limit the market's potential. And, compared to state regulation, federal regulation might prove more difficult to change later.

However, federal legislation to address sales and marketing abuses in LTCI may not be premature. Sales and marketing abuses have plagued the senior insurance markets through the years, no doubt dampening consumer demand. Weak and/or inconsistent state regulation of sales and marketing abuses can create an unfair advantage for some companies and cause others to leave the market or to limit the number of states in which they sell. Thus, uniform federal regulations that address such concerns as disclosure of policy information, cancellability of coverage, free look provisions, expected loss ratios, and marketing abuses may be in the best interest of both consumers and the industry. Standards for specific LTCI policy provisions such as suitability and levels of care covered could continue to be shaped through a combination of state action based on NAIC standards and product innovations by progressive insurance companies.

Appendix

The following summarizes the issues addressed in NAIC's Long-Term Care Insurance Model Regulation (641-1) and Long-Term Care Insurance Model Act (640-1). The complete models are available from NAIC, 120 W. 12th St., Suite 1100, Kansas City, MO 64105.

Long-Term Care Insurance Model Act Provisions

- Definition of long-term care insurance.
- Disclosure and performance standards for long-term care insurance.
- Cannot cancel, nonrenew or otherwise terminate on the grounds of age or health.
  - Cannot create a new waiting period if policy is converted or replaced by policy from same company.
  - Cannot provide coverage for skilled care only or significantly more coverage for skilled care than for other forms of care.
  - Waiting period for coverage of preexisting conditions cannot be longer than six months.
  - Cannot condition eligibility for benefits on prior hospitalization or receipt of a higher level of institutional care.
  - Cannot condition eligibility for benefits other than waiver of premium, post-confinement, post-acute care, or recuperative benefits on a prior institutionalization requirement; cannot require more than 30 days of institutionalized care; cannot require admission for the same or related conditions 30 days after discharge.
- Shall have the right to return the policy within 30 days for a free refund.
- Must provide an outline of coverage at time of initial solicitation.
- Must deliver a policy summary when deliver policy.

- Policy must provide for nonforfeiture benefits.
- Insurer may rescind a policy that has been in force less than six months or deny an otherwise valid claim with evidence of material misrepresentation by the consumer on the application.
- Insurer may rescind a policy or deny a claim for a policy in force more than six months but less than two years with evidence of misrepresentation both material to acceptance for coverage and pertaining to the condition for which the benefits are sought.
- Policies in force more than two years are not contestable without evidence the consumer knowingly and intentionally misrepresented relevant facts related to his/her health.
- If the insurer has paid benefits, the benefit payments may not be recovered if the policy is rescinded.

Long-Term Care Insurance Model Regulation Provisions

- Policy must be guaranteed renewable or noncancelable.
- Definition of activities of daily living, acute condition, adult day care, bathing, cognitive impairment, continence, dressing, eating, hands-on assistance, home health care services, mental or nervous disorder, personal care, skilled nursing care, toileting, transferring.
- Policy may exclude only the following: preexisting conditions; mental or nervous disorders but not including Alzheimer's Disease; alcoholism and drug addiction; illness, treatment or medical condition from war, participation in a felony, riot or insurrection, service in the armed forces, suicide or attempted suicide, aviation; treatment provided in a government facility; services provided by the immediate family; services for which there is normally no charge.
- Standards about conversion or continuation of group policies to individual coverage.
- Premium rate restrictions, including a statement that the initial premium shall not increase during the first four years a policy is in force; after that, if the insured is age 80 and over, premiums may not increase more than 10% in aggregate during any five-year period; increase is limited to 15% for insureds age 65 to 80 and 25% for those under age 65. Premiums cannot increase due to increasing age after age 65 or because of the duration the insured has been covered.
- Standards related to unintentional lapse of policy; at issue of policy, insured must identify at least one person to receive notice of lapse or termination of policy or waive that privilege; insured and designee must receive a notice at least 30 days before cancellation.
- Insured has the right to reinstate coverage after unintentional lapse if the insurer receives proof of cognitive impairment or loss of functional capacity within five months of lapse.
- Required disclosures: renewability, riders and endorsements, payment of benefits, limitations, disclosure of tax consequences, and benefit triggers.
- Prohibition against post-claims underwriting; prior to issuing a policy to an applicant age 80 or older, insurer must receive a report of a physical exam, or an assessment of functional capacity, or an attending physician's statement or copies of medical records.
- Minimum standards for home health and community care benefits: Cannot limit or exclude benefits by requiring that the insured must need skilled care, must first receive nursing services, by limiting eligible services to those provided by registered nurses or licensed practical nurses, by excluding coverage for personal care services, by requiring that the insured have an acute condition, by limiting benefits to services provided by Medicare-certified agencies or providers, or by excluding coverage for adult day care services. If provided, home health or community care services must equal at least one-half of one year's coverage available for nursing home benefits.
- Policies must offer inflation protection no less favorable than one of the following: increase benefit levels annually so that increases are compounded no less than 5%, guaranteed the right to periodically increase benefit levels without evidence of insurability by no less than the difference between the existing benefit and that benefit compounded annually at a rate of at least 5%. Inflation protection must continue without regard to age, claim status, or claim history.
- Application form must include designated questions designed to learn whether the consumer has another long-term care policy in force; if the policy replaces one in force, the agent must give the consumer a notice regarding replacement of coverage.
- Expected loss ratio should be at least 60%.
- Companies must establish fair marketing procedures; twisting, high pressure sales tactics, and cold lead advertising are prohibited.
- Standards regarding associations marketing insurance to their members.
- Insurers must develop suitability standards to determine whether the policy is appropriate for the needs of the consumer and train its agents to use the

standards. The agent must return a Long-Term Care Personal Worksheet with information about the consumer's income and assets with the application for coverage.

- Definitions of nonforfeiture benefits and how they are to be calculated when a policy lapses; the minimum must be not less than 30 times the daily nursing home benefits at the time of the lapse. The nonforfeiture benefits must start no later than the end of the third year following the issue date unless it is an attained age rating policy and then it must start by the tenth year.
- A policy shall condition payment of benefits on ability to perform activities of daily living (ADL) and cognitive impairment. Eligibility shall not be more restrictive than requiring a deficiency in three of the ADLs or cognitive impairment.
- All applicants must receive a long-term care insurance shopper's guide.

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Endnotes

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2. For this paper, the definition of LTCI does *not* include "living benefit" insurance policies which pay death benefits prior to death to individuals who become seriously or terminally ill.

Just Say Yes: The Consumer Buycott As an Organizational Initiative

A survey of the consumer research literature revealed few instances of "consumer buycotts, " i.e., efforts by consumer activists to induce shoppers to buy the products or services of selected companies in order to reward these firms for behavior consistent with the goals of the activists. The few cases did however prompt the development of a conceptual framework for understanding the place of buycotts on a consumer activist agenda.

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The origins of this paper go back to the early postwar efforts of activists to advance the consumer interest by protesting the sharp rise in retail food prices which followed the lifting of wartime price controls (Stein, 1975). From that time until now, the most common form of organized consumer activism employed in the United States has been the consumer boycott, with literally hundreds having been initiated in the last few years (Putnam, 1993). In the light of the popularity of boycotts it may come as a surprise that recent research has revealed only modest evidence of success for these initiatives (Friedman, 1991).

What some activists see as a promising alternative to consumer boycotts is their "flip side," namely efforts called "consumer buycotts" which attempt to induce shoppers to buy the products or services of selected companies in order to reward them for behavior which is consistent with the goals of the activists. While boycotts often aim to punish firms for past misdeeds, buycotts commonly endeavor to reward them for past good deeds, and the reward approach is generally favored by behavioral theorists and practitioners (e.g., Bandura, 1969, 1987).

Although buycotts have not enjoyed the popularity of their boycott counterparts among consumer activists, given the limited success of boycotts and the behavioral science promise of buycotts, this research project had as its goal an extensive study of consumer buycotts with recommendations concerning how this tactic might be more effectively used by activists.

Project Procedures and Results

To study consumer buycotts a three-step procedure was planned consisting of identifying such initiatives through a literature review, conducting interviews with their principals, and analyzing the data generated by the interviews. Unfortunately this plan produced few instances of documented buycott campaigns. However, while the literature on buycott initiatives proved to be fragmentary, what was found, in conjunction with the much more comprehensive material available on boycotts and other consumer initiatives (e.g., Friedman, 1991; Smith. 1990), did spark the first steps in the development of a conceptual framework for buycotts which may be of interest to scholars as well as practitioners.

Perhaps the most fundamental distinction drawn by this framework is between nominal buycotts and actual buycotts. Nominal buycotts simply use published lists or seals of approval to identify available products, services and/or retail firms that the buycotters are recommending to consumers. Lists may take such forms as green pages (ecologically-oriented firms recommended by environmental groups such as Co-op America), "best buys" (product brands and models recommended for purchase by Consumer Reports and other consumer testing publications), and "cruelty-free" products (product brands and models for, say, cosmetics which have been developed by industry using a process which does not endanger the health or well-being of laboratory animals).

Seals of approval are also diverse in nature including traditional union labels, the RUGMARK seal of the National Consumers League indicating that a carpet has not been made with child labor, and various environmental seals of approval, such as Green Cross and Green Seal.

Actual buycotts go beyond such published lists and seals of approval to launch organized campaigns for the purpose of persuading consumers to purchase the one or more items identified by the buycott. The Buy American campaign is an example of such as actual buycott; this campaign generated television commercials featuring such celebrities as Bob Hope highlighting "Made in America" labels on items of clothing in a retail context. This particular campaign illustrates some of the problems often associated with buycott campaigns in that in today's complex manufacturing environment it is often not clear if a consumer product is of domestic or foreign origin, and even when it is clear, many economists believe that an effective Buy American campaign could hurt rather than help the American economy (Lohr, 1993).

Many so-called buycotts appear to be nominal rather than actual. And this being the case, it is questionable whether they can really be considered to be true buycotts. For as every advertiser knows well from experience, published lists or seals of approval are a necessary but usually insufficient step to alter well-established consumer purchase behaviors; an advertising or promotional campaign is needed to make the message actionable.

A second fundamental distinction among buycotts drawn by the conceptual framework is that between single-target buycotts and multiple-target buycotts. Among actual buycotts (those with campaigns) it is the multiple-target varieties which appear to be the more common (e.g., consumers being urged to buy union-made products or products made in America). Only rarely, it seems, is a single target the focus of a buycott, such as a single brand and model of a product or a single manufacturer or retail firm.

What the foregoing suggests is that consumer buycotts are not likely to go beyond the simple assembling of "multiple-items-to-purchase lists," in that they seldom initiate campaigns (especially single-target campaigns) to serve the protest needs of consumer activist groups.

A New Role for Consumer Buycotts

Are there special concerns of consumer activist groups which might be effectively served by buycotts? One that comes to mind at the community level considers campaigns to help retail businesses, such as special-niche book stores, foreign restaurants, and other for-profit enhancers of "cultural diversity" which are endangered by lack of patronage. A campaign by "Friends of . . ." to "Save. . ." may make a difference in the survival of such businesses and the special qualities which their presence adds to the community. While such campaigns (as well as other fundraisers) are common in the not-for-profit arena, they are relatively rare in the for-profit sector.

At the national level, a similar rationale could be used to launch buycotts which reward for-profit firms, such as Ben & Jerry's and the Body Shop, which donate a substantial portion of their proceeds to charitable causes, although the "substantial" claim was recently questioned in the case of the Body Shop (Entine, 1994).

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New Directions for the Consumer Policy Arena: A Social Network Perspective

We are functioning more and more in a consumer policy climate characterized by fiscal and resource constraints necessitating alliances, managed partnerships, coalitions, and mergers. The roles of the key market players, consumer, business and government, are changing (Consumer and Corporate Affairs Canada, 1992). With these changes come new relationships. Given this reality, it seems prudent to study the *attributes of the relationships* between stakeholders as they collectively develop marketplace and consumer policy to serve respective interests, especially over time. To that end, the social network perspective is suggested as a means of perceiving and understanding policy development, implementation and evaluation.

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Social Network Analysis

The social network perspective (or structural perspective) is concerned with identifying and understanding the relationships which develop between stakeholders in networks. It is important to realize that a network is a construct created by a researcher and imposed on the data so as to analyze relationships since most stakeholders (participants) will not perceive themselves as part of a network (Barnes, 1969). Network analysis, which has been with us since the 1920s and resurfaced as a research tool in the late sixties (Tichy, 1981), is continuing to gain credence as a viable mode of conducting policy research. Network analysis identifies the communication structure (form and content) of the network system using the interpersonal *relationship as the unit of analysis*; that is, it examines the regularities and nuances of patterns of relationships among actors in the network. Various types of links can be examined including but not limited to: transactions, resource transfers, communications, penetration of boundaries, sentiments, authority, or kinships. The two basic foci are intensity or strength of relationships and joint involvement in activities (Knoke, 1990; Knoke & Kuklinski, 1980, 1991; Scott, 1991).

Political Networks

Recently, scholars in the field of policy development and analysis have turned to social network theory to understand relationships that develop during policy development, implementation and evaluation. Knoke's (1990) work on Political Networks provides a means of understanding contemporary political life from a network (structural) perspective; that is, viewing political systems as social networks rather than a series of discrete, one time exchanges. He discusses six different facets of political behaviour from a relationship and power perspective: voting and political participation; social movements; organizational power; community power structures; elites in a nation state; and, international relations. From a social network perspective he is able to understand how network participants (actors) are connected to one another in the overall structural configuration. On the premise that the basic units in any complex political system are not the individuals but their role or position in relation to others, the political system as a whole can be investigated through the properties of the links or relationships between actors and properties of the web or network of relationships that develops as they develop and analyze policy.

On the premise that a complete explanation for the process of policy development and implementation requires knowledge about the relationships among the system actors (people, corporations, organizations, agencies, interest groups), Coleman and Skogstad (1990) utilized the concepts of political networks and policy communities to outline an analytic framework that focused on the capabilities of state and societal actors and on the relationships that exist among them. The particular policy communities examined from this perspective included: labour, fisheries, agriculture, banking, forestry, poverty, occupational health, women's interest groups, and the poverty policy community. Similar to Knoke (1990), they concluded that public policy making does occur within policy communities in which actors interact to shape the policy over time. The structural perspective enabled them to identify central actors at the core of the policy process as well as periphery actors. It enabled them to map these various policy communities and to focus on the relationships among the public and private sectors that form around particular issues. They agreed that the ability to explain the phenomena of policy development and implementation was enhanced by examining closely the interaction between state and societal actors.

Consumer Policy from a Micro-Economic Perspective

An area of policy impacting consumers is consumer policy, taken to be political actions which aim at maintaining, advancing or protecting consumer's interests in the marketplace (Pestoff, 1988; Rock, Biervert, & Fischer-Winkelmann, 1980). It is government decisions (whether made in concert with other stakeholders or in isolation) which create or improve the conditions under which the consumer can obtain satisfaction from consumption in a market economy (Koopman, 1986). By convention, consumer policy has been developed, implemented and analyzed from a micro-economic perspective which was developed to understand the dynamics of a market economy. Relevant concepts are efficiency, effectiveness, competitiveness and equity of policies, state agencies, programs or the marketplace as an institution (Belobaba, 1985; Brander, 1988; Forbes, 1987; Harris & Carman, 1983, 1986; McGregor,1994; Ramsay, 1984, 1985).

Both Knoke (1990) and Coleman and Skogstad (1990) challenged existing means of understanding policy development and analysis. Knoke resisted the inclination to perceive policy from the normative conformity and the behavioral perspectives while Coleman and Skogstad challenged the societal-centred argument for public policy as well as the state-centred view. This paper challenges the conventional approach of analyzing *consumer policy* solely from a micro-economic perspective. Sole reliance on economic percepts to understand policy developed to regulate market behaviour results in a lack of understanding of the relationships that develop between stakeholders as they develop, implement and evaluate policy. And while economic theory does accommodate the individual and his or her behaviour in relation to input and output markets, it does not account for the relationships between stakeholders (Boddewyn, 1985). Mattsson (1985) advised that we should not dismiss or replace the economic perspective, however, but rather transcend it by adopting a new perspective, the structural network perspective. Such a change adds a new stream of research to the current practice of a field (Karlinsky, 1987), in this instance, to consumer policy.

Consumer Policy from a Social Network Perspective

From a network perspective, we can understand that stakeholders from the consumer policy community will coalesce into a policy network to deal with a specific consumer issue. Coleman and Skogstad (1990) defined a policy community as "all actors or potential actors with a direct or indirect interest in a policy area or function who share a common 'policy focus,' and who, with varying degrees of influence, shape policy outcomes over the long run" (p.25). The policy network concept refers to the *properties that characterize the relationships* among the particular set of actors that forms around an issue of importance to the policy community (Coleman & Skogstad, 1990, p.26).

McGregor (1992) proposed that, when dealing with the issue, policy network members would interact among themselves within the boundaries of the network while simultaneously relating to the broader constituencies they represented in the consumer policy community, and possibly with members of other networks dealing other consumer issues. Otherwise, the temporary alliance formed among the stakeholders in the network usually becomes passive or less active (Hutt, Mokwa, & Shapiro, 1986; Shapiro, 1986). The configuration of the membership and the structure of the network of stakeholders will change as time evolves as will the nature of their interaction.

McGregor, drawing extensively on marketing channel and network analysis literature, also suggested that the policy network would evolve sequentially over time in six stages: (a) egocentric internal activity before linking with others; (b) unilateral contact with other stakeholders (awareness); (c) exploratory formation of dyads; (d) dynamic reconfiguration of concurrent multi-dyads with increasing range and depth of relations (expansion); (e) commitment to maintenance and management of multiple, diverse relationships; and, (f) contraction, dissolution or termination of multi-dyadic relations once the issue had been resolved.

Methodology

To illustrate the usefulness of bringing a social network perspective to understand consumer policy, the remainder of the paper will share results of a case study of the twenty year development of electronic fund transfer system (EFTS) policy in Canada. Over 1,000 direct contacts and referrals to others were coded (via a content analysis of 231 policy related documents) and incorporated into the EFTS case study (McGregor, 1992). Using an iterative case study approach (Yin, 1984), it was possible to contact an extensive range of informants and to secure a detailed description of how their involvement and the collective policy process both evolved. There were sixteen stakeholders lobbying for their interest relative to EFTS: a consumer organization, eight government departments/agencies, and seven financial/retail associations (see Table one).

Table 1
16 Stakeholders in Canadian EFTS Policy Network: 1972-1992

Consumer
Consumers Association of Canada
Business
Canadian Bankers Association
Trust Companies Association of Canada
Canadian Cooperative Credit Society
Payments Alternative Communications Exchange
Interac Association
Retail Council of Canada
Canadian Federation of Independent Business
Government
Consumer and Corporate Affairs Canada
Department of Finance
Department of Justice
Canadian Payments Association
Office of the Superintendent of Financial Institutions
Law Reform Commission
Public Interest Advocacy Centre
Provincial and territorial governments

Each of the 16 constituents vetted and approved their respective cases and confirmed that the case accurately reflected their involvement in the policy process. It is therefore assumed that, in spite of a degree of inevitable incomplete data (which may be different from the data that is available (Walsh, 1990)), vetting the respective case studies provided an accurate representation of the phenomena: the consumer policy process for EFTS in Canada. These sixteen case studies were then amalgamated into a chronological case study and analyzed from a network perspective (McGregor, 1992).

The decision to focus this paper on the structure of the network was driven by the reality that stakeholders do not often perceive themselves to be in a network of related actors (Barnes, 1969). These results provide compelling evidence of a policy network for EFTS thereby providing a benchmark from which to discuss, in future papers, the evolution of the network over time and the nature of the relationships between the actors.

EFTS Consumer Policy

EFTS was chosen as a consumer issue for several reasons. The existing consumer protection legislative framework regulating the paper based payment system (cheques, cash, money orders, credit cards) was and is challenged by the introduction of technological innovations (cash dispensers, automated teller machines, debit cards, smart cards, computerized stock markets, pre-authorized debits and payments, home teleshopping and home banking). Knoke (1990) convincingly argued that a technological innovation is a valid stimulus for imposing a network perspective on any policy process. From a micro-economic perspective there are market failures in the social, economic, legal and informational arenas. Since the marketplace structure and the *relationships* between consumers, sellers (financial institutions and retailers) and governments have changed due to the computerization of the payment system, it is important to appreciate the development of a policy to deal with this challenge to market behaviour and integrity from a relational perspective. Knoke acknowledged that the imperatives of interest maximization (an economic principle) compels stakeholders to construct dyadic exchange relations. Networks are initially unintended consequences of these purposive self interest actions. But once a relatively stable configuration emerges, this network is a fact of political life and must be taken into account because each stakeholder has a position in the network (p.109).

Results

Although there were sixteen constituent stakeholders involved in the EFTS policy network, for the sake of expediency, the profile of the twenty year life span of the network will be presented on an aggregate basis: consumer, business and government. Likewise, although there were nine possible dyadic relationships, the changing structure of the network will be presented using aggregate dyadic relationships: consumer-business; government-consumer; and, business-government.

The changing *structure of the consumer policy network* for EFTS in Canada as it evolved from 1972-1992 will be profiled using seven conventional network structure concepts (see Table two) (Mitchell, 1969; Knoke, 1990; Knoke & Kuklinski, 1980, 1991; Scott, 1991). Due to space limitations, only the major findings related to the structure of the network will be presented (highest percentages, strongest positions).

Table 2
Concepts measure characteristics of policy network

- Who started the network, when, in what sequence (**anchorage**)?
- How many, and who, are in the network (**size**) at any given point in time?
- Of those that could be in the network, how many actually are (**density**)?
- Of those who are in the network at any given time, to what degree are they linked with each other (**connectedness**)?
- How long did the network last? Did the combination of actors stay the same or change (**stability**)?
- How aware were the policy network members of each other's activities (**knittedness**)?
- How did stakeholders feel about remaining and interacting in the policy network over time (**cohesiveness**)?

Anchorage

Who started the network, when, in what sequence? These are the questions related to anchorage. As regards origins, government was the first to join the EFTS policy network followed by business and then consumers (very close to each other). Consumer and business association membership never lapsed in the policy network once they entered but government departments changed quite often; they entered and left quite frequently with an average of two departments or agencies present at any one time. Interestingly, once a government department left the network, it did not reenter (except for the Department of Finance which has to be present when there is potential legislation involved).

Government had the highest incidence of being in the network followed by business and then, the consumer. When there were only two stakeholders present, it was *always* business and government. The number and identity of government departments and agencies fluctuated continually over the twenty year time span with an average of two present from a possible eight. The number of business associations eventually numbered seven, with each one joining incrementally (one at a time) and never leaving after joining. The average number of business associations in the EFTS policy network at any one point in time was four and their specific identity was quite consistent.

The g-c link was in existence every year beyond 1972 but with continually changing government departments and agencies. The c-b link began later, in 1975, and was quite cyclical in nature probably because there was only one consumer association but seven business associations. The g-b link was in existence every year of the life of the EFTS policy network but was characterized by different government agencies and different business associations.

Size

During the life of the EFTS policy network, for almost three quarters of the time, all three aggregate stakeholders were present (consumer, business and government). At the constituent level there was an average of 8.5 stakeholders in the policy network in any given year but never were all sixteen there and seldom with the same compliment of constituent stakeholders (eg. never the exact same business organizations or government departments). The policy network started out with two stakeholders, moved through a fourteen year period where the size of the network fluctuated between 8-10 members and culminated with 13 stakeholders during the last three years.

The size of the network fluctuated as it evolved but the general pattern was to increase as time passed. The pattern was to start small, basically plateau with half of the possible constituents present for a lengthy period of time, then increase towards the end of the life of the policy network with a completely different compliment of constituent stakeholders. In short, the size of the network was more stable during the last third of the life of the policy network than it was during the first two thirds, especially as regards the identity of the constituents. This fluctuation in the size of the network occurred partially due to the changing government compliment and the incremental nature of the business constituent.

Density

Density is the proportion of actual to potential dyadic relations in the network and is expressed as an indices ranging from 0-1. The closer to one the higher the density. The density of the policy network started out sparse and increased as time went by. The policy network was moderately dense most of the time with the average density being .71. In lay terms this means that, of all of the possible nine dyadic links which could have been in place, 71% percent of them existed at some point in time over the twenty year life span of the policy network. As regards the proportion of dyads which were interacting, collectively and on a yearly basis, the network density increased as time went by, starting out sparse and increasing to the point that during the last third of the life of the policy network, it was completely dense (1.00); that is, all three aggregate dyads were in the network. The b-g link was most dense, followed by the c-g link and then the c-b link (which was the most sparse). The missing link, regardless of the network dimension being examined, is the consumer-business link. This held constant for the duration of the policy network and for every variable.

Connectedness

This concept refers to: "of those who are in the network, to what degree are they linked (strongly, unilaterally, weakly or disconnected (not linked))"? Knowing this would give some indication of how readily information and resource exchange can flow between the stakeholders. The network gained connectedness as it evolved, more so towards the end of the time frame; the network was predominately strongly connected (38% of the time). It was unilaterally connected 29% of the time (meaning that each major dyad was in contact but that not all communication was reciprocal). The remainder of the time it was either weakly connected (24% of the time) or diffuse (9% of the time). The network was weakly or unilaterally connected during the first two thirds and strongly connected during the last third of the life span of the policy network. As with other variables, the missing link in the unilateral (diffuse) years is the c-b link; again, when a link was missing at any point in time, it was almost exclusively the c-b link. Even when the policy network was weakly connected, it meant that the business stakeholder(s) did not interact with the consumer organization in any fashion during that specific year.

Stability

Stability refers to the length of time that stakeholders consistently remain in the policy network. The network was *moderately stable* most of its life span; that is to say that, there was some fluctuation in the composition of the dyadic memberships but the aggregate network (consumer-business-government) continued to exist and function, predominately with multi-dyadic links. Over a twenty year time frame, there were collectively nine years when there was incidence of the same collection of stakeholders in the policy network (43% of the time) but never consecutively. Conversely, 57% of the time, the population of the policy network was not the same.

This stability of aggregate membership and fluctuation in constituent memberships (in conjunction with predominance of multi-dyadic links) is again strong evidence of a moderately stable, dynamic network. Furthermore, the stability of the network (the length of time that stakeholders consistently remained in the policy network) increased as time evolved. The policy network was very stable during the last third of its life span and moderately stable during the first two thirds. As with other variables, the g-b link was the most stable, followed by the g-c link and finally the b-c link.

Knittedness

For the purposes of this analysis, knittedness refered to the awareness of each other's presence in the policy network and their activities. Indicators of the awareness of each others activities included sending direct communications to each other and/or referring to each others work or activities. The more relationships that exist, the more closely or tightly knitted the network and vice versa. The network was predominately tightly knitted. It fluctuated between moderately and tightly joined during the first two thirds and, finally, was consistently tightly joined during the last third of the life span of the network. This pattern (fluctuation between moderate and tight, culminating in tight) suggests that most stakeholders were very aware of each others activities in the network and increasingly so as the EFTS policy network evolved. This is the preferred mode of operation since it ensures continual exchange of resources, information, positions on issues and the like.

Cohesiveness

Cohesiveness has been defined as the desire to stay in the network. It was proposed that the fact that stakeholders were making referrals about or directly communicating with others implied that they were making an effort to maintain some degree of contact with that stakeholder; hence, they were contributing to the cohesiveness of the policy network. From an aggregate perspective (consumer, business and government), the overall cohesiveness of the network was strong 79% of the time indicating prevailing desire to stay in the network. As regards each major stakeholder, consumer and business were strongly cohesive (inclined to maintain relationships using both direct communications and referrals to other's work) while government cohesiveness was split between strong and implied (just direct communications). This could be explained by the frequent changing of actual government departments in the policy network.

Especially, the network was strongly cohesive from 1982 onward (last 10 years). The network exhibited predominately implied cohesiveness in the early years during which the policy network was evolving (54% of the time actors were making referral to others but had no direct contact). As time went by, stakeholders were more and more inclined to deal directly with each other. Compared to an overall network cohesiveness (desire to stay in the network) of 71%, business was the one most likely to be in strongly cohesive relationships (57% of the time they made referrals to others *and* had direct contact). Consumers had the highest probability of being described as being in diffuse relationships during the evolution of the policy network (29% of the time they were not referring to or contacting anyone) Government was most inclined to make referrals only (43%). Each dyadic link had a different profile for cohesiveness with business-government being the most cohesive. While the b-g and g-c links was predominately strongly cohesive (b-g more so that g-c), the c-b link was diffuse.

Summary

The network primarily consisted of varying combinations of one consumer association, seven business associations and eight government departments or agencies. It was primarily highly dense (71%), strongly cohesive (71%), strongly connected (38%), tightly knitted (65%), and moderately stable (43%). This means, respectively, that stakeholders predominately wanted to remain in the network and continue to maintain relationships, did so in strongly connected and tightly knitted contacts (direct communications and referrals), with links characterized by fluctuation in constituent memberships but multi-dyadic in nature. Network size, density, knittedness, cohesiveness, connectedness and stability all increased noticeably in the latter half of the life of the policy network. This is indicative of a marked improvement in the reciprocal flow of information, an increased awareness of the positions of competing interests, an increased capacity and degree of activity to advance one's own interest, and an enhanced communication channel and political exchange process. Ultimately, the EFTS policy network consolidated into a triad of 13 actors (consumer, business and government) in 1992. They collectively arrived at a Voluntary Code of Conduct for EFTS of which all aggregate stakeholders were signatories ("Canadian code", 1992).

Conclusions and Implications

Using the social network approach to study the phenomena of consumer policy development has been remarkably productive. One is reminded that a network is a construct imposed on a phenomena by an investigator so as to examine relationship development and the character of changing network configurations.

This analysis has confirmed that, in spite of reservations from stakeholders who claimed that there was no network, there was a network for the EFTS policy issue and it had a unique and fluctuating character. The social network perspective provided concrete shape to a nebulous, multiple decade process. Given that an EFTS network did emerge and had a dynamic existence, an appreciation of the fluctuating reconfiguration of this network sheds insights into the policy development for other consumer issues. The interests of all participants could be advanced if they were aware of the changing properties of a policy network.

The social network perspective: (a) validates the existence of a consumer policy network; (b) affords a new way to mentally and tactically perceive the consumer policy process; (c) reduces ambiguity and adds an element of certainty; (d) confirms the necessity of managing relationships as policy develops; (e) substantiates the requirement of a consortium of tactics and strategies to deal with changing actors over time; (f) provides respect for the divergent nature of the major policy dyadic links; (g) empowers stakeholders as regards their influence in the policy process; and, (h) builds foundations for future collective actions to develop policy for other issues or as follow up for the issue at hand.

With certainty, these findings provide sustenance to the nuances of the consumer policy phenomena, previously only described anecdotally. This anecdotal stance has often been superseded by conventional attention to the attributes to the policy, the organization or the person, never the relationships or links between stakeholders. Belobaba (1985) challenged us to shift our focus so that the complexities of modern consumer policy making could be better understood; a network perspective facilitates transforming our approach to consumer policy. Venkatesh and Burger (1984) recently advocated that we gain an appreciation of the broad relationships that lie *behind* the regulatory process; a social network approach to consumer policy enables us to embrace this challenge. Indeed, once a relatively stable policy network configuration forms, it becomes a fact of political life and must be taken into account (Knoke, 1990). The social network approach allows us to 'see' the evolutionary structure of consumer policy networks. We are better equipped to appreciate that interacting stakeholders are engaging in relational exchanges that need to be managed and nutured as their roles and interests continue to change and be challenged in today's dynamic, global marketplace.

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Endnote

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Who has a Negative Attitude Toward Installment Debt in the U.S.?

Approximately 35 percent of the U.S. population has negative attitudes toward buying goods through an installment plan. Logit analysis of 1989 Survey of Consumer finances revealed that the probability of having negative attitudes toward borrowing was significantly related to age, number of children, education, race, marital status, homeownership, attitudes toward expected real income, and attitudes toward risk taking.

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Introduction

Consumer installment debt is one of the most important economic aggregates to affect economic growth and stability (Hendricks, Youmans, & Keller, 1973). Installment debt also plays an important role in household utility, investment, savings and consumption choices (Herendeen, 1974). According to the 1986 Survey of Consumer Finances, more than 80 percent of families had consumer installment debt (Avery, Elliehausen, & Kennickell, 1987). Between 1980 and 1993, consumer installment credit outstanding increased by 165 percent. The total amount outstanding in 1980 was $298.2 billion, which increased to $790.1 billion in 1993 (U.S. Bureau of Census, 1994). By the end of 1994, consumer installment credit was over $900 billion and the ratio of the aggregate debt outstanding to disposable personal income was over 80 percent (Canner, Kennickell, & Luckett, 1995).

When households have high levels of installment debt, installment payments will reduce financial resources for current expenses and savings (Courtless, 1993). Sumarwan and Hira pointed out high installment payments would make households more vulnerable when financial emergencies occurred (Courtless, 1993). Moreover, "The earlier buildup of debt and the recent resurgence have prompted questions about the financial strength of the household sector - its vulnerability to economic slowdowns and its ability to sustain spending levels that support economic growth" (Canner, Kennickell, & Luckett, 1995, p.323).

Due to the importance of consumer installment debts, studies have been carried out in an effort to identify the determinants of consumer installment debts. The significant growth of a household's credit outstanding reflects the rapid growth in the availability of consumer credit, longer time of loan maturities, more convenience users, a liberal attitude toward borrowing, and a shift of consumer preferences toward credit use (Eastwood, 1985; Luckett & August, 1985). In other words, households' ability to incur debt and their attitudes toward credit use contribute to the dramatic increase of consumer installment debt.

The existence of liquidity constraints has been at the center of recent research. Households' inability to borrow has been concluded as the major factor which contributes to the failure of the life-cycle permanent income hypothesis (Hall & Mishkin, 1982; Hayashi, 1985; Flavin, 1985). Liquidity constraints reduce household consumption as well as household debt below the desired level (Hayashi, 1985; Cox & Jappelli, 1993; Duca & Rosenthal, 1993).

Since borrowing behavior is determined by both lenders and borrowers, factors on the demand side of credit are also important. Household attitude toward the use of installment debt is the most important factor on the demand side of the market (Hendricks et al., 1973). Nevertheless, consumer attitudes toward credit use, an indicator of consumer willingness to borrow (Zhu & Meeks, 1994) has not been extensively studied.

Although Americans embrace borrowing as a way of life, it is not true that all consumers are willing to borrow. This paper will study household borrowing behavior from the point of view of which consumers have a negative attitude toward installment debt.

The purpose of this study, then, is to examine the determinants of the probability of being a household which has negative attitudes toward incurring installment debt. The achievement of this purpose will make a contribution to our understanding about household attitudes toward credit use and household borrowing behavior. The findings will give answers to some important questions such as "Will higher levels of household debt affect households' attitudes toward borrowing?" The implications are important for lending officials, financial counselors, and educators.

Review of Literature

Lutz (1991) pointed out that attitude had been the most widely used theoretical construct in marketing decision making. Using the definition given by Fishbein and Ajzen (1975), Lutz explained that attitudes were learned through information or experience. Attitudes were predispositions which gave consistently favorable or unfavorable responses to an object which could be a person, issue or behavior. Lutz concluded that attitudes led actual behavior. By this reasoning, consumer attitude was an important determinant of consumer behavior.

Consumer attitudes toward the use of credit was one of the most important factors which explained borrowing behavior on the demand side of the credit market (Hendrick et al., 1973). Using Survey Research Center panel data for 1967 and 1970, Hendrick et al. (1973) concluded that attitude had a statistically and economically significant effect on installment debt use. It was also concluded that household attitudes toward credit were very stable over time. Households who changed their attitude would behave on average the same as households who had held similar attitudes for several years.

Following Hendrick et al., (1973), Canner and Cyrnak (1986) constructed the index of consumer attitudes toward credit use by summing the number of positive responses to nine questions about possible reasons to borrow, using the 1983 Survey of Consumer Finances. The index was used as an explanatory variable in a logit model to predict the probability of being a convenience user of credit cards. The findings indicated that households who preferred borrowing were more likely to use credit cards as a source of revolving credit and more likely to accept borrowing money for luxury items. Thus, households which viewed borrowing favorably incurred more debt to finance their needs, and households which viewed borrowing unfavorably incurred less debt.

Focusing on consumer credit use in low income families, Zhu and Meeks (1994) incorporated ability and willingness variables to investigate the determinants of family outstanding credit balance using data from the 1983 and 1986 Survey of Consumer Finances. The willingness variables were represented by two indicators: general attitude toward credit and specific attitude toward the appropriateness of credit use. The findings showed that the significant determinants of credit outstanding in 1986 were: previous outstanding credit balance in 1983, employment status, age, the interaction of educational level and specific attitude, and the interaction of credit outstanding in 1983 and specific attitude. It was concluded that the ability to borrow was more likely to override the willingness to borrow for low income households.

Methods

Identifying who Has a Negative Attitude Toward Incurring Installment Debt

The sample frame for the analysis in this study is the 1989 Survey of Consumer Finances (SCF). It is the best existing data source of household assets and debts. Moreover, it contains information on consumer attitudes toward credit. Households which have negative attitudes toward installment debt are observable in this study.

The question which ascertains consumer' attitude toward credit is "In general, do you think it is a good idea or a bad idea for people to buy things on the installment plan?" The possible answers for this question are 1) good idea, 2) good in some way, bad in others, and 3) bad idea. The households who answered "bad idea" are defined as the households which have negative attitudes toward installment debt. To reduce the impact of outliers, households which have very high income are excluded. The final sample contains 3,132 out of the original 3,143 observations. Sample weights are used because of oversampling of wealthy households in 1989 SCF data.

Variables

The dependent variable is the probability of being households which have negative attitudes toward installment debt. Since households' attitudes toward installment debt reflect both their time preference of consumption and ability to repay, factors which influence household time preference of consumption and ability to repay will be included in the model. Thus, the probability of being a household which has a negative attitude toward installment debt is a function of three groups of independent variables: socio-demographic factors, economic factors, and attitudinal factors. Socio-demographic factors include age, gender, race, education, number of children, marital status, and employment status. Economic factors consist of household income, total debt, net worth, household ability to borrow, and homeownership. Attitudinal factors are attitude toward future interest rate, attitude toward future real income, attitude toward financial risk, and attitude toward saving. To capture the interactive effects between household ability to borrow and household income, an interaction term of ability to borrow and income is added to the model.

A convex curve linear relationship is expected between age and having negative attitudes toward borrowing. Households' time preference to consume is considered to vary with the life cycle stage (Eastwood, 1985). According to the U.S. National Commission on Consumer Finance (1972), young households more readily accept borrowing as an economic tool than older households. However, young households are also more likely to believe they will be turned down and tend to have negative attitudes toward borrowing. For middle-aged households, they expect to have greater ability to repay and have stronger time preference to incur installment debt due to the responsibility of taking care the families. As a result, the middle-aged households are expected to be less likely to have negative attitudes toward installment debt than households which are in other stages of life cycle.

Female-headed households and black households are expected to be more likely to have negative attitudes toward borrowing than male-headed households and nonblack households. This is because households in these two groups have been found to have lower ability to repay their debt. Employed households have a greater ability to repay their debt and they are proposed to be less likely to have a negative attitude toward installment debts.

According to the economics of marriage, individuals will marry when total output from the marriage equals or exceeds the sum of the single output of the two individuals and the individual's share of marital output must equal or exceed his or her single output (Bryant, 1990). The economies of scale in consumption will reduce the debt demand of married households. Therefore, they will be less likely to incur debt. However, the spending for family formation may lead married households to have positive attitudes toward borrowing. The relationship between marital status and the probability of having negative attitudes toward installment debt is therefore not certain.

The increase of birth rate stimulates debt expansion (Luckett & August, 1985). This is because the arrival of a child will increase the demand for market goods and service (Bryant, 1990). Also, having children is a type of human capital investment. Based on the economics of fertility, children are able to provide social, psychological, and economic security in a couple's old age (Bryant, 1990). The rate of return on having children is believed to be greater than the market rate of interest to incur debt. Hence, a household is less likely to have negative attitudes toward borrowing when it has more children. To capture the effect of education, dummy variables are used instead of the "quasi-quantitative" variable of years of education. More educated households are assumed to be more confident of their financial management and their ability to repay than less educated households. They are expected to be less likely to have negative attitudes toward installment debt than their counterparts.

Households which have more income are supposed to have a greater ability to repay their debt. According to previous studies (Slocum and Lee, 1970), it is expected that upper income groups hold more favorable attitudes toward credit use than lower income groups. "Moreover, household survey information strongly suggests that upper-income households, which should be best equipped to handle debt, have accounted for a large part of the growth in consumer debt" (Luckett & August, 1985, p.389). Thus, there is a negative relationship between income and households' negative attitudes toward borrowing.

For households which have more net worth, their need to incur debt may be reduced; however, their ability to repay will increase their willingness to borrow. The relationship between net worth and the probability of being households which have negative attitudes toward borrowing is therefore uncertain.

To take care of the housing expenses such as furniture and maintenance, homeowners are expected to be less likely to have negative attitudes toward installment debt than those who do not own a house.

The existence of credit constraints has indirect effects on a consumer's willingness to borrow (Deaton, 1992). It is hypothesized that households which are credit constrained are more likely to have negative attitudes toward borrowing than households which are not credit constrained.

Interest rate is the price which households pay for credit. When households predict interest rate will increase, future consumption becomes cheaper relative to present consumption and borrowing becomes more expensive. The substitution effect will decrease households' willingness to borrow. The income effect also decreases households' willingness to borrow since it will decrease the real income and consumption of borrowers (Bryant, 1990). Therefore, it is expected that the net effect makes households which predict that interest rate will increase in the future more likely to have negative attitudes toward borrowing than other households.

Households which are not willing to take on any risk in investing family savings are less likely to draw down their assets to bridge current consumption and future income. Consequently, they will be more willing to borrow to finance their needs. It is hypothesized that they are less likely to have negative attitudes toward borrowing than the other households.

If households expect their future real income to increase, they also expect their ability to repay debts will increase. Hence, households which expect their future real income to increase are hypothesized to be less likely to have negative attitudes toward incurring installment debt than the rest of the population. Households which expect their future real income will decrease are predicted to be more likely to have negative attitudes toward borrowing than the other households.

Households which do not save are less likely to hold liquid assets to smooth their consumption. Therefore, it is hypothesized that non-savers are less likely to have negative attitudes toward credit than savers.

Analysis

As the dependent variable is dichotomous and micro data are used, logit analysis of microdata (Hanushek & Jackson, 1977) was applied in this study. The dependent variable was coded as one if households have negative attitudes toward installment debt, zero otherwise.

Table 1

Logit Analysis of the Probability of Having a Negative Attitude Toward Installment Debt

VARIABLES	Coefficients
Intercept	0.0852
Age	-0.0605 ***
Agesq	0.0007 ***
Unable	0.1022
Child	0.1072 **
Edu1	-0.1443 **
Edu2	-0.2183 ***
Race	0.2675 ***
Female	0.1166
Married	0.1672 **
Work	-0.0177
Home	-0.1166 *
Income(10,000)	-0.0002
Debt(10,000)	-0.0006
Worth(10,000)	0.0002
Income1	-0.0156
Income2	-0.1040 *
Inter1	0.0099
Inter2	-0.0262
NoRisk	-0.0932 *
Nonsave	-0.0147
Unable*income	0.0196

*p < .05. **p < .01. ***p < .001.

Results

About 35 percent of all households have negative attitudes toward installment debt. Their mean age is 51. Sixteen percent of these households are not able to borrow. Two-thirds of households are married, 70 percent are employed, 7 percent are black. Half of them expect that interest rates will increase while 16 percent of them expect that it will decrease. The sample mean household total income before tax is 34,128, total debt is 33,127, and total net worth is 171,933.

Table 1 presents the results of the logit analysis of the probability of being households who have negative attitudes toward installment debt. Consistent with expectations, the estimated coefficients of age and age square significantly confirm the convex relationship between age and households' negative attitudes toward borrowing. The probability of having negative attitudes toward installment debt decreases with age early on, hits the lowest point at age 43, then increases sharply.

In addition to age, the socio-demographic factors which have significant impact on the probability of having negative attitude toward borrowing are number of children, education, race, and marital status. As expected, Black households are more likely to have negative attitudes toward installment debt than non-black households and households which have more education than high school are less likely to have negative attitudes toward borrowing than households which are high school graduated. But, households which have less education than high school are also less likely to have negative attitudes toward installment debt than households who have graduated from high school. The result shows there is a non-linear relationship between education and the probability of having negative attitudes toward installment debt.

Number of children is positively related to the probability of having negative attitudes toward installment debt. This finding is contradictory to the hypothesis.

Married households are more likely to have negative attitudes toward installment debt than non-married households. The effect of the expenses used to form a family may therefore be offset by the effect of economic scale.

The signs of the coefficients of gender and employment status are consistent with expectations. Female-headed households are more likely to have negative attitudes toward installment debt than male-headed households. Employed households are less likely to have negative attitudes toward installment debt than unemployed households. However, these two factors do not have a statistically significant impact on the probability of having negative attitudes toward installment debt.

Economic factors defined in this study are not significantly related to the probability of having negative attitudes toward installment debt with the exception of homeownership. As expected, homeowners are less likely to have negative attitudes toward installment debt than households which do not own a house.

Coefficients for household total income before tax, total debts, and net worth are not significantly different from zero. Households' inability to borrow does not significantly influence the probability of having negative attitudes toward installment debt.

The hypothesis is supported that households which are not willing to take on any risk in investing family savings are less likely to have negative attitudes toward installment debt than households which are willing to take risk.

Interestingly, expected future interest rate is not significantly related to the probability of having negative attitudes toward installment debt. Likewise, households' saving behavior does not have significant effects on their attitudes toward credit use.

As expected, households which expect their future real income to increase are less likely to have negative attitudes toward installment debt than those which expect it to remain the same. However, households which expect their future real income will decrease are also more willing to borrow than those which expect it to remain the same. This result is contradictory to what was predicted.

Conclusions and Implications

Credit market equilibrium is determined by credit demand and credit supply. While we know that 20 percent of the U.S. population are credit constrained (Hayashi, 1985; Jappelli, 1990), approximately 35 percent of the U.S. population have negative attitudes toward installment debt. It appears that households' attitudes toward borrowing is as important as households' inability to borrow in explaining disequilibrium in the credit market.

This study has attempted to identify those factors that determine the probability of being a household which has negative attitudes toward installment. The most important determinants are age, number of children, education, race, marital status, homeownership, attitudes toward expected real income, and attitudes toward risk taking. The results suggest several important implications.

First, the probability of having negative attitudes toward installment debt is dominated by household socio-demographic factors. So-called economic factors such as income, debt, and net worth do not play an important role in household attitudes toward installment credit use. This finding is important for financial institutions in helping them to identify their potential market. It is also important for financial counselors and educators who help people to deal with their financial problems.

Second, credit expansion has generated concern about the impact of consumer indebtedness on consumer expenditures and economic growth. The findings from this study show that high debt levels will not affect their attitudes toward installment credit. According to Jappelli's (1990) study, there is no significant relationship between households' ability to borrow and household debt. It is concluded that debt level does not affect households' ability to borrow and attitudes toward borrowing. In other words, consumer indebtedness will not have significant impact on consumer expenditures and economic growth.

Third, households' ability to incur debts is not significantly related to households' attitudes toward incurring debts. The finding is not consist with Deaton's (1992) assumption that unwillingness to borrow will be strengthen by liquidity constraints.

Finally, according to Hendricks et al. (1973), the relationship between household attitudes toward installment credit use and household debt is different between high income groups and low income groups. The relationship between ability to borrow and willingness to borrow also varies among different income groups. For future studies, it is important and necessary to separate households into different income groups to study household attitudes toward credit use.

Acknowledgements

I would like to thank Dr. Richard Widdows, my major professor, for his help during this research.

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Endnotes

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Factors Affecting Families' Consumer Debt Burden

The purpose was to examine the effect of several factors including family type (occupational status and number of employed spouses) on consumer debt burden. An adaptation of the systems model was analyzed with data on 1,382 couples from the 1989 Survey of Consumer Finances. The analyses revealed that income, number of children, aversion, payment behavior, and one family type (career-earner) were associated with consumer debt burden.

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Introduction

Increased labor force participation by married women has been perceived as one of the major social and economic changes in the United States. The proportion of wives in the labor force has risen substantially from 31.9% in 1960 to 60.7% in 1994 (U.S. Bureau of the Census, 1995). Couples may have increased economic security if both spouses are employed, but there may be differences in that security depending upon occupational status of the spouses. Career status in this study means mean that persons are well-educated and have more options for advancement as compared to wage-earner employees (U.S. Office of Personnel Management, 1991). Hence, those with careers may feel more certain about the future than others. A question that has not been researched is whether financial management practices (Van Raaij & Gianotten, 1990) and consumer debt burden differ when couples vary by occupational status (career or wage-earner) and one or two incomes. Information concerning the use of consumer credit by family types is limited in spite of the profound growth in use of consumer credit.

The rapid development of financial markets has stimulated the growth of consumer credit. Starting from a base of less than three billion dollars at the end of 1945, consumer debt has grown profoundly (Luckett & August, 1985). The amount of outstanding consumer debt in 1990 was three trillion dollars, compared to 1.3 trillion dollars in 1980 (Meehan et al., 1990). Although mortgage debt accounts for the largest financial obligation for most families, consumer debt is more widespread in contrast to mortgage debt (Kennickell & Shack-Marquez, 1992). The dramatic expansion in consumer indebtedness is often attributed to credit card usage. The average amount of outstanding debt on credit cards has been the most rapidly growing share of consumer credit (Bloom & Steen, 1987). In 1990, $445 billion worth of goods and services were purchased by credit card charges (Canner & Luckett, 1992). Previous research has attempted to distinguish characteristics of credit card use (Canner & Cyrnak, 1986; Choi & DeVaney, 1995; Ethridge, 1982; Danes & Hira, 1990; Mathews & Slocum, 1970; 1972). Credit card revolvers tend to be younger, have lower incomes, and have more children.

Purpose and Theoretical Framework

The purpose of the study was to examine the effect of several factors on consumer debt burden. The study was influenced by two trends: increased participation of married women in the labor force and increased use of consumer credit (Bailey, 1987). It was hypothesized that consumer debt burden would vary by families according to income, age, education, number of children, family type (number of spouses employed and occupational status of the spouses) attitude toward use of credit, and financial management practices.

According to the systems model (Deacon & Firebaugh, 1988), a family is a system composed of three units: input, throughput, and output. Input consists of resources and demands which were represented in this study by income, age, number of children, education, family type, and attitude toward credit. As family members use resources to meet demands in the throughput process, the changes in resources and demands are called outputs. The throughput process was represented by several financial management practices and output was represented by consumer debt burden. It was not known a priori whether there were direct effects from the input upon output or whether output resulted as an effect of throughput.

Methodology

Data and Sample

Data were obtained from the 1989 Survey of Consumer Finances (SCF) (Kennickell, 1992). The SCF, sponsored by the Federal Reserve Board, collects comprehensive information on family finances. The 3,143 households in the SCF were selected based on standard multistage area-probability sampling methods. Data were weighted to minimize the influence of an over sampling of wealthier households. The SCF codes the husband, if present, as the respondent. The selection criteria was that the household must consist of a husband and wife who were less than 65 years old with at least one spouse working. There were 1,382 couples who met the criteria. To overcome non-response errors in the SCF, a systematic multiple imputation was applied to provide information about unanswered questions; five imputations were given for each missing value. Results from all five data sets were examined and no important differences were found. To simplify the analysis, results are given from only the first data set.

Variables

Input Variables. Input variables consisted of income, age, education, number of children, attitudinal factors, and five family types: one- and two-wage earners, one- and two-career families, and career-wage earner families (one spouse working in a career with the other working as a wage-earner). Job status was based on the 1980 Census of Population Occupation Record (Avery & Kennickell, 1988, p. 142). Career spouses were executives or administrative, managerial, or professional specialists; all other categories were identified as wage-earners. Attitude toward credit was measured by questions which asked if buying on credit for specific items was a good idea.

Throughput Variables. Response to questions about financial practices were treated as throughput variables. Responses were categorized as follows: Financial planning period was measured from 1 to 5, a few months to longer than 10 years. Shopping effort was the amount of effort looking for the best credit terms measured from 0 to 10, none to a great deal. Risk aversion was the risk respondents were willing to take when making financial decisions measured from 1 to 4, substantial to not at all. Shopping for credit terms was measured by 12 possible responses which were recoded as 1 if shopping for credit terms was based on interest rate and 0, otherwise. Loan payment behavior was categorized as 1 equals late payment and 0 equals other. Most important reasons for saving were categorized as: precautionary (emergency or retirement), consumption, education, and cannot save.

Output Variables. The output measures were (a) the ratio of outstanding credit card balance to income, and (b) the ratio of outstanding consumer loans to income. Consumer loans consisted of the amount currently owed on automobiles, household durable goods, recreation or entertainment goods, and personal loans. Thus, all financial indebtedness except for mortgages and loans for the repair of current residence and for investment were included in the output measures.

Methods of Analysis

To determine whether continuous measures varied significantly among types of families, the General Linear Model (GLM) was applied to test the differences of sample means. The Student-Newman-Keuls (SNK) procedure was used to test means that were significantly different (Miller, 1981; SAS Institute Inc., 1989). Chi-square was used to test the differences of the frequencies of the qualitative variables. When proportions were significantly different, pairwise comparisons were made to learn where differences existed (Siegel & Castellan, 1988). Since the distribution of sample means of attitudes toward credit and debt-to-income ratios departed from the normal distribution, nonparametric Kruskal-Wallis tests were employed (Neter, Wasserman, Kutner, 1990). If results of the Kruskal-Wallis tests found the means to be statistically unequal, Bonferroni correction of P value was applied to obtain the magnitude of the means during pairwise comparisons.

It was hypothesized that debt burden could be affected by the input and also the throughput variables. To determine whether the effects of input and throughput variables were direct or indirect, two standard least squares regressions in two stages were applied (Koutsoyiannis, 1977). In the first stage, Ordinary Least Squares (OLS) and logistic regression equations were used to examine determinants of the throughput variables, the financial management practices which consisted of: financial planning period, amount of effort in shopping for credit, risk aversion, choice of credit based on interest rate, and payment behavior. Because the first three dependent variables were continuous variables, OLS was used to examine the relationship between dependent and independent variables. The last two dependent variables were binomial; logistic regression was used to examine the relationship between the response probability of the dependent variable and the independent variables (Kennedy, 1992).

Credit card debt burden and consumer loan debt burden were the dependent variables for the second stage of analysis. Tobit regression was used because of the censored dependent variable (Kinsey, 1981); about 35% of each family type had no credit card debt or consumer loan debt. The estimated values of financial management practices from the OLS and logistic regressions were included as independent variables, along with socioeconomic variables, in the Tobit regression models in the second stage.

Findings and Discussion

Socioeconomic Factors

Results from GLM and SNK tests are shown in Table 1 with each column representing a type of family and each row representing a variable. A capital letter below each mean indicates the result obtained from the Student-Newman-Keuls test. Means with the same letter are not significantly different from each other.

Two-career families had the highest average income, $89,518. Husbands in one-career families were the oldest, with an average age of 43.5 years. Husband's highest level of education, on average, ranged from 15.56 to 11.56 years for two-career and one-wage-earner families, respectively. Two-wage-earner families had significantly fewer children than any other family type

Financial Management Practices

One-wage-earner families had the shortest planning period. No significant differences were found for amount of shopping for the best credit terms. Each family type indicated that they exerted a moderate effort in shopping for credit terms. Respondents in two-career and career-wage-earner families were significantly more likely than other family types to take more risk. One-wage-earner families were the most risk averse.

Only four pairwise comparisons could be made and career-wage earner families were not included in the four pairs since it was difficult to classify arbitrarily whether career-wage earner couples belonged to the career couples or the wage-earner couples. Pairwise comparisons (not included in the table) showed that one-wage-earner families were significantly less likely to choose a lender based on interest rate than were one- and two-career families. Also two-wage-earner families were less likely to choose credit based on interest rate than were one-career families.

Pairwise comparisons (not included in the table) showed that two-career families were less likely to be late with scheduled payments compared to one- and two-wage-earner families. The primary motive for savings was for precautionary (retirement and emergency) purposes. Pairwise comparisons showed differences between one-wage-earner and one- and two-career families for saving for education.

Credit Card and Consumer Loan Debt Burden

Table 2 shows the credit card and consumer loan debt burden. The proportion of families who had outstanding credit card balances ranged from 62.2% to 42.4%. Two-career families had the highest average outstanding balance ($1,958) while one-wage-earner families had the lowest ($577). Two-wage-earner families had the highest credit card debt burden, on average. Pairwise Kruskal-Wallis tests showed that one-wage-earner families had a significantly lower credit card debt burden than two-wage-earner families.

Consumer loan balances varied from $9,101 to $4,116, on average. The highest consumer loan debt burden was held by two-wage-earner families. When pairwise tests were conducted, no differences in consumer loan debt burden were found among the types of families. Pairwise comparisons (not included in the table) showed a difference only for credit card debt burden and only for one pair: one- and two-wage earners. Thus, average consumer debt burden was comparable among family types.

Results of The First Stage of Regression Analysis

Financial Planning Period. Age and education were positively associated with financial planning period. This suggests that families with respondents who were older and had more education were more likely to plan for longer periods. See Table 3. Compared to one-wage-earner families, several family types were more likely to have longer financial planning periods. Families who agreed with the use of credit for living expenses were more likely to have longer planning periods.

Amount of Effort in Shopping for Credit. There was a positive association between age and education and amount of shopping for credit terms suggesting that as age and level of education of respondents increased, families were likely to expend more effort in shopping for credit terms. However, one-career families, compared to one-wage earner families, were less likely to expend effort in shopping for credit terms. Those who agreed with the use of credit for luxuries (furs and jewelry) and education were less likely to exert effort while those who agreed with the use of credit for vacations were likely to exert more effort in shopping for credit. When the attitudinal variables were included in the second stage of analysis, the regression was unable to reach convergence. Consequently, the attitudinal variables were omitted from the final models.

Table 1

Descriptive Statistics for the Five Types of Families

	One-wage earner	One-career	Two-wage earners	Two-careers	Career-wage-earner
	(n=348) (n=141)	(n=431) (n=121)	(n=340)		
Socioeconomic Factors (GLM and SNK tests)					
Income	36,656	70,176	38,529	89,518	56,463
	(C)	(B)	(C)	(A)	(B)
	F = 9.90	p = < 0.001***			
Age of husband	41.21	43.57	38.65	41.47	39.46
	(B)	(A)	(C)	(B)	(C)
	F = 7.56	p = < 0.001***			
No of children	1.63	1.60	1.36	1.63	1.60
	(A)	(A)	(B)	(A)	(A)
	F = 3.38	p = < 0.01**			
Edu of husband	11.56	15.12	12.22	15.56	14.29
	(E)	(B)	(D)	(A)	(C)
	F = 119.03		p = < 0.001***		
Financial Management Practices (GLM and SNK tests)					
Planning period	2.81	3.40	3.03	3.32	3.20
	(C)	(A)	(B)	(A)	(AB)
	F = 7.43	p = < 0.001***			
Effort to find credit	6.18	5.96	6.22	6.36	6.36
	(A)	(A)	(A)	(A)	(A)
	F = 0.51	p = 0.72			
Risk aversion	3.41	3.23	3.18	3.01	3.02
	(A)	(B)	(B)	(C)	(C)
	F = 12.60		p = < 0.001***		
Financial Management Practices (Chi-Square)					
Interest rate	21.91%	37.51%	27.07%	33.32%	31.43%
	χ^2 = 13.87		p = < 0.01**		
Late payment	21.66%	16.71%	26.20	12.19%	22.22%
	χ^2 = 13.33		p < 0.05*		
Saving motive					
Precautionary	53.29%	58.26%	51.41%	50.11%	59.92%
Consumption	25.78%	24.73%	28.91%	21.70%	18.32%
Education	8.69%	13.91%	13.78%	23.59%	17.75%
Cannot save	12.24%	3.10%	5.91%	4.60%	4.00%
	χ^2 = 46.34		p < 0.001***		

*p < 0.05. **p < 0.01. ***p < 0.001.

Table 2
Credit Card and Consumer Loan Debt

	One-wage earner	One-career	Two-wage earner	Two-career	Career-wage-earner
Credit card debt	$577	$1,065	$1,058	$1,958	$1,180
% of all with debt	42.4%	50.8%	62.2%	57.2%	61.3%
Consumer loan debt	$4,116	$7,670	$4,355	$9,101	$5,977
% of all with debt	56.4%	58.4%	62.9%	72.2%	69.9%
(Chi-Square)					
Credit card burden	1.91%	2.79%	4.09%	3.46%	2.78%
$\chi^2 = 30.18$		$p = < 0.001$***			
Consumer loan burden	13.83%	20.47%	25.33%	14.22%	14.19%
$\chi^2 = 10.29$		$p = < 0.05$*			

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

Table 3
Results of OLS and Logistic Regression Analyses on Financial Management Practices

	Planning Period	Amount Shopping	Risk Aversion	Interest Rate	Late Payment
Intercept	1.31***	4.32***	3.52***	-3.69***	1.80*
Income	8.53E-8	-6.38E-18	-8.05E-8	1.07E-8	-4.43E-6
Age	0.01***	0.02***	0.00	0.02**	-0.05***
Education	0.06***	0.09***	-0.03***	0.10***	-0.09***
No. of children	-0.05	-0.03	0.03	0.01	0.09
Family type					
One-wage-earner	-	-	-	-	-
Two-wage-earner	0.22*	-0.01	-0.18**	0.26	0.29
One-career	0.37***	-0.67*	-0.03	0.34	0.17
Two-career	0.29	-0.27	-0.24**	0.16	-0.17
Career-earner	0.29***	-0.15	-0.26***	0.27	0.26
Attitude					
Installment plan	-0.03	0.06	0.00	0.02	0.19***
Vacation	-0.02	0.31***	0.11	0.10	-0.11
Living expense	0.05**	-0.03	0.03	0.06	-0.06
Furs/jewelry	0.05	-0.27***	-0.01	-0.03	0.08
Car	0.04	0.01	0.01	0.02	-0.13
Education	-0.01	-0.18*	0.04	-0.12	0.01
Adjusted R^2	0.05	0.02	0.05	---	---
Pseudo R^2	---	---	---	0.05	0.12

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

Risk Aversion. Compared to one-wage-earner families, three family types (two-wage-earner, two-career, and career-earner) were more likely to take financial risk, holding other variables constant. Also, respondents with less education were more likely to be risk averse.

Credit Based on Interest Rate. Age and education were positively associated with choosing credit based on interest rate suggesting that when respondents were older and had higher levels of education, those families were more likely to use interest rate as the basis for deciding on a lender.

Payment Behavior. Age and education were negatively associated with late payment behavior indicating that the probability of late loan payments increased if the respondent was younger or not as well educated. The likelihood that respondents reported making late payments was associated with using credit for installment plans.

Results of the Second Stage of Regression Analysis

The purpose of the second stage was to identify the effects of both input and throughput variables on the two output measures: credit card debt burden and consumer loan debt burden. The results are shown in Table 4.

Credit Card Debt Burden. Results of the Tobit regression indicated that income, number of children, and the predicted values of risk aversion and late payment behavior were indicators of credit card debt burden, i.e., there were direct effects for income, number of children, risk aversion, and payment behavior on credit card debt burden. Income was negatively related to credit card debt burden suggesting that lower income families were more likely to have a larger credit card debt burden. There was a positive association between number of children and credit card debt burden suggesting that families with more children have increased use of credit cards relative to income.

There was a negative association between the predicted value of risk aversion and credit card debt burden. Risk aversion was coded as 1, substantial, to 4, not at all. Results of the first stage using OLS regression suggested that, compared to one-wage earner families, three family types (two-wage earner, two-career, and career-earner families), were likely to be more risk tolerant. Also, families with a more highly educated respondent were more likely to be risk tolerant.

The predicted value of late payment behavior was associated with credit card debt burden. Families who were less likely to make payments on time were more likely to have larger credit card debt burdens. In the first stage, age and education were negatively associated with late payment behavior suggesting an indirect effect for age and education on the credit card debt burden. That is, families with a younger or less well educated respondent, are more likely to have a larger credit card debt burden.

Consumer Loan Debt Burden. Results from the Tobit regression show that income and education were negatively associated with consumer loan debt burden. Number of children was positively associated with consumer loan debt burden. These findings suggest that families with lower incomes, more children, and lower levels of education were more likely to have higher consumer loan debt burdens, all else equal. Compared to one-wage-earner families, career-earner families were likely to have lower consumer loan debt burdens.

The effect of predicted variables for financial management practices was similar to credit card debt burden except families who had not made late payments were more likely to have larger consumer loan debt burdens.

Implications

The results provide useful information to financial management educators and counselors. Results of the first stage of analysis showed that education was associated with each of the financial management practices of length of planning period, amount of shopping for credit, risk aversion, selection of interest rate, and payment behavior. Thus, it is important to target programs and materials to the educational level of individuals and families.

When educators and counselors have an opportunity to present programs, they should attempt to assess the audience through questionnaires, interviews or pre-tests to learn the background of the prospective participants. Similar efforts to assess the target audience should be made when preparing written materials on financial management.

The effect of income on debt burden in the second stage of analysis suggests that educators and counselors need to assist lower income households in evaluating the amount of credit card and consumer loan debt that is being carried. Although two-wage-earner families had about the same income level as one-wage-earner families, they carried almost twice as much credit card debt, on average. If there was an interruption in even one income, two-wage-earner families could experience serious difficulties in handling expenses. If families are uncertain about income, it should be useful to learn as much as possible about managing cash flow.

Table 4
Results of Tobit Regression Analysis on Debt Burden

	Credit Card Debt Burden	Consumer Loan Debt Burden
Intercept	0.6504***	5.9777**
Income	-3.0238E-7***	-8.80020E-7***
Age	-0.0012	-0.0065
Education	-0.0025	-0.0553*
No. of children	0.0102*	0.0505*
Family type		
One-wage-earner	-	-
Two-wage-earner	0.0366	-0.2397
One-career	0.0345	-0.0936
Two-career	0.0112	-0.2935
Career-earner	0.0078	-0.4436**
Estimated index		
Planning period	-0.0478	-0.3165
Risk aversion	-0.1553**	-1.5375***
Shopping behavior	-0.0123	-0.0362
Payment behavior	0.1515***	-0.9918*
-2 Log Likelihood	208.56	1097.12

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

Note: Because education and financial planning period were highly correlated with the probability of basing choice of a lender on interest rate, the variable for interest rate was deleted from the debt burden models.

Age was associated with each of the financial management practices in the first stage. Husbands in two-wage-earner families tended to be younger than other husbands. This suggests that two-wage-earner families may be in an early life-cycle stage where they are likely to be accumulating durable goods. Information to help these families understand short- and long-term goals and the use of a financial planning period may be needed.

Families may need information to help them understand that the use of credit cards can be a more expensive way to obtain credit since the interest rate on credit cards tends to be higher than the rate for consumer loans. The effect of the variables for payment behavior and risk aversion indicate that information on these topics should be included in educational materials and programs. Assisting families to understand the effect of late payments on future credit use could encourage them to make payments more promptly or to reduce dependence on credit.

The finding that there was little difference among family types in amount of shopping to find the best credit terms should be addressed. Although this information is available, families may be reluctant to expend the necessary effort to acquire the information. Educators need to present techniques to help families compare the cost of obtaining credit. The finding suggests that research is needed to understand why families do not appear to search for and use information on interest rates.

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Profiling the Consumer Debt Portfolio of American Households: Differences by Income

Data from the Survey of Consumer Finances were used to profile the consumer debt portfolio of 3143 American households. Households were divided into income quintiles for purpose of analysis. Descriptive statistics and LSMeans multiple comparison tests were used to profile debt portfolio data and make comparison between income groups. The three middle income groups showed least significant differences across portfolio variables. The lowest income quintile had a debt to income ratio of 0.52.

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Introduction

Consumer debt in the U.S. has been growing at an alarming rate. Consumer debt, as a specific category of credit, grew at a faster rate in the decade of the 80's than at any other time in the history of the nation (Feinberg, 1993). During that decade, total consumer installment debt more than doubled, increasing at a mean annual rate of 8.82 percent (Board of Governors of the Federal Reserve, 1981-1991). This virtual explosion of consumer credit has had a major impact on the American economy. During the 1980's consumer credit fueled the economy by making it easier to acquire goods and services. By the end of the decade, the downside of the credit explosion had begun to impact many American households. In 1990 more than 400,000 individuals made contact with Consumer Credit Counseling agencies seeking respite from their credit problems. During this decade of unduplicated credit expansion, the rate of personal bankruptcy doubled as well (Detweiler, 1993).

Household debt is generally divided into two categories, mortgage debt and consumer debt (Canner and Luckett, 1991). Consumer debt is defined as "nonbusiness debt used by consumers for purposes other than home mortgages" (Garman & Forgue, 1994, p. 174). Consumer debt is made up of consumer loans, credit card debt, and home equity loans/lines of credit. Consumer debt may be secured by the equity in a home, by the goods being financed, or unsecured as in the case of credit cards (Canner and Luckett, 1991).

While the quantity of consumer debt has been documented, there has been little empirical analysis about the character of the consumer debt portfolio -- how consumer debt is distributed across the spectrum of credit vehicles and how this distribution varies by income. The concept of a "portfolio" has generally been applied to assets. This same idea can be applied to the liabilities of a family thus allowing for more detailed scrutiny of their current debt situation.

The objective of this study is twofold. First, this study profiles consumer debt portfolios of U.S. households showing how consumer debt varies by income level of the household both in magnitude and composition. Second, the study highlights the differences in the distribution of debt across the various consumer debt vehicles for five income groups.

With the tremendous increase in the availability and marketing of consumer credit vehicles, the results of this analysis will provide insight into the changing nature of the American family's consumer debt. This information adds to the base knowledge about consumer debt. Further, it may assist individuals having an interest in the financial well-being of families to develop and target educational programs as well as inform policy concerning the impact of credit on that financial well-being.

Background

A large proportion of consumer debt is held in credit cards. During the 1980s, consumer debt rose an average of 8.8 percent annually while credit card debt rose at the rate of 13.5 percent per year (Board of Governors of the Federal Reserve, 1981-1991). With the current proliferation of credit cards there are many more opportunities to acquire goods and services on credit than at any other time in history. According to Lawrence Lindsey, a Federal Reserve Board Governor, a major factor in the alarming increase in consumer debt is the heavy marketing of credit cards. During the first quarter of 1995, banks sent out 1.2 billion credit card solicitations, ". . .five for every man, woman, and child in America" (Bleakley, 1995, p. A12).

Credit cards have two basic functions. They serve as a "means of payment and a source of credit" (Courtless, 1993, p. 10). Consumers who pay off their balances each month are using their cards as a "means of payment". Those who maintain balances are using their card as "a source of credit", expanding current consumption and planning to pay later (Courtless, 1993).

Home equity loans and lines of credit are no longer limited to the financing of home improvements as they once were (Family Economics Review, 1994). Consumers are being enticed to tap the equity in their home to finance everything from a new car to their children's college education. When the Tax Reform Act of 1986 phased out the tax deductibility of non-mortgage loans, consumers were encouraged to borrow through a home equity loan when needing funds for a consumer purchase. This enables most consumers to deduct the loan interest if they itemize deductions. Lenders have taken advantage of tax reform to aggressively market the home equity loan (Courtless, 1993).

Although the vehicle loan has typically been the largest component of consumer credit (Courtless, 1993), the increase of auto leasing may impact that category of consumer debt. The growth in credit card debt during the 1980s may also change the distribution of consumer debt across the debt portfolio.

In summary, not only has consumer debt increased in this country, but the types of consumer debt vehicles available to consumers and the motivation for using these different forms of credit have also increased. Documentation of this changing picture of consumer debt can provide insight into the willingness of American households to take on consumer debt and their preferences for various credit vehicles.

Methodology

The data for this study were from the 1989 Survey of Consumer Finances (SCF) a national study commissioned by the Federal Reserve Board and seven other federal agencies. The study was conducted by the Survey Research Center of the University of Michigan. The SCF contains comprehensive financial information on 3143 respondent families from the 48 contiguous states. Of the 3143 observations, 2277 were selected using standard multistage probability sampling methods with an additional 866 observations selected through the use of tax data for the purpose of over sampling wealthy households (Kennickell & Shack-Marquez, 1992). The sample was weighted to produce a nationally representative sample for this analysis. Data set one was used for this study.

Descriptive statistics were used to profile the debt portfolio of respondent families with the sample divided into income quintiles. Each quintile contained 20 percent of the total sample. The income quintiles are as follows:

Quintile 1:	< $ 9,000
Quintile 2:	$ 9,001 - $ 19,000
Quintile 3:	$ 19,001 - $ 30,000
Quintile 4:	$ 30,001 - $ 48,000
Quintile 5:	> $ 48,000

In developing the portfolio of consumer debt for this analysis, consumer debt was operationalized as the sum of four components: credit card debt, vehicle loan debt, consumer loan debt, and the portion of home equity loan debt which could be reasonably considered as consumer debt. Where respondents provided two purposes for a home equity loan and only one met the consumer debt criteria, fifty percent of the home equity balance was considered as consumer debt.

There were three areas of financial obligation which might have been considered in the total consumer debt portfolio but were not included. The first is the financial obligation which comes with an automobile lease. Although automobile leases do carry a financial obligation, by strict accounting principles they are not considered as debt and therefore were not included in this analysis. SCF also provided data for outstanding loans on life insurance policies and retirement accounts. However, SCF did not have data concerning the purpose of these types of loans. There was no method for determining if the loan would meet the criteria for consumer debt so they were also not included.

As a way of profiling the consumer debt portfolio for each of the five income categories, means were calculated for total income, number of credit cards, balances on credit cards, vehicle loans, consumer loans, the consumer component of home equity loans and total consumer debt. A ratio variable was also constructed dividing total consumer debt by annual income to specify the debt to income relationship. SCF contained three cases where respondents reported zero income and a positive value for consumer debt. These cases were deleted when calculating the ratio variable.

To determine if the observed differences between any two income groups were significant for each of the consumer debt variables, multiple comparison tests were conducted using the least-squares means option of the GLM procedure. The LSMeans option provides a comparison of means when data are unbalanced. A more detailed explanation of the LSMeans option can be found in SAS/STAT User's Guide, Volume 2.

Results

Of the 3143 respondent families in SCF, 37.2 percent indicated having no consumer debt as operationalized for this study. Because over a third of the sample had no consumer debt, this analysis was done twice, once on the full sample and again on sub-samples restricted to observations where the family carried the type of debt under consideration. The sub-sample for the ratio variable was restricted to families carrying some consumer debt.

Nationally, credit cards are the fastest growing component of consumer debt. Almost 70 percent of the respondents in SCF had at least one credit card. Twenty-eight percent of the families in the lowest income quintile and 96 percent in the highest income group had at least one credit card. As income increased, both the likelihood of having credit cards and the total number of credit cards increased (Tables 1 and 2). Given the role of income in determining credit worthiness, this finding was not necessarily surprising. Perhaps of greater interest was that almost a third of respondents with incomes below $9,000 held credit cards. Median household income for 1988 was $27,225 (U.S. Department of Commerce, 1995). Households in Quintile 1 were well below this median yet 28 percent had qualified for at least one credit card. As income approached the median level for the period (Quintile 3), 77 percent of households had credit cards.

Sixty-one percent of all households had store credit cards compared to 57 percent with bank credit cards. Families in the four lowest income quintiles were more likely to have store credit cards than bank cards while those in the highest bracket were slightly more likely to have bank credit cards (Table 1). Because store credit cards tend to have lower credit limits than bank cards and often have less stringent qualifying criteria, families in the lower income groups may have found it easier to obtain merchant specific cards. The convenience and versatility of bank cards may have had more appeal to higher income households.

Total credit card debt tended to increase as income increased. While it might have been expected that higher income households would use credit cards more as a means of payment than to augment current consumption, households in the two highest income brackets were more likely to carry a balance on their credit cards than households in the lower three quintiles. When the sample was restricted to households having at least one credit card, households in the middle income quintile were the most likely to carry forward a balance on their credit cards (Table 1). In this restricted sample, upper income households were still more likely to carry a balance than lower income households. Clearly the use of credit cards to augment current consumption was not limited to lower income households.

Focusing on vehicle loans as a component of the consumer debt portfolio, the percentage of households having such debt increased as income increased (Table 1) although the difference between Quintile 4 and 5 was negligible and not significant. Historically, vehicle loans have been the largest single component of the consumer debt portfolio. In looking at the full sample, this would be true for all but the lowest income group. For Quintile 1 vehicle loans made up only one-fourth of the consumer debt burden (Table 2).

Consumer loan balances decreased slightly from Quintile 1 to Quintile 2 and then increased as income expanded (Tables 2 & 3). The category of consumer loans was the largest single component in the consumer debt portfolio of the lowest income group. It is difficult to offer a reasonable explanation for this finding. Perhaps it is more the lack of vehicle loans than exceptionally high amounts of consumer loans that give the latter category a relatively greater weight in the debt portfolio of the lowest income group.

One of the newer forms of consumer credit is the home equity loan/line of credit where the funds borrowed are used for a consumer purchase. Families might have selected this way of funding a consumer purchase because mortgage interest, including the interest on a home equity loan, was the only form of interest allowed as an itemized tax deduction after the tax reform of 1986. Even with the tax advantage offered by this type of loan, only a small percentage of households in 1989 were involved in this form of consumer debt. The majority of households having a home equity loan were found in the upper two income quintiles (Table 1). There are likely at least two reasons for the concentration of home equity loans in the higher income sector. First, given the progressive nature of the income tax system, higher income families would derive greater financial benefit from the deductibility of interest. Second, higher income families are more likely to have sizeable equity in a home to tap for such loans.

Families in Quintiles 4 and 5 were the most likely to have some consumer debt (Table 1). Only in Quintile 1 were fewer than half the families carrying some consumer debt. Families at the lower end of the income spectrum likely experienced the greatest difficulty qualifying for credit given their limited resources.

The total amount of consumer debt was positively correlated with income for both the full sample and the sub-sample (Tables 2 and 3). The mean amount of consumer debt more than doubled between

Quintiles 2 and 3 for the full sample and almost doubled between the same two groups in the restricted sample. This increase in the level of consumer debt may reflect some threshold in household income necessary to qualify for many forms of consumer credit.

While the propensity to acquire consumer debt and the quantity of such debt increased as income increased (Table 1), when consumer debt was related to income in the ratio variable, the patterns were considerably different. For the full sample, the ratio variable indicated that the burden of consumer debt was the least for households in the highest income quintile. Quintile 2 had the second lowest value for the ratio variable. Looking at the restricted sample of respondents with some consumer debt, the debt burden indicated by the ratio variable declined as income increased. For the lowest income group the consumer debt ratio equaled .52 dropping to .18 for households in Quintile 5 (Table 3). Although in absolute dollars, high income families carry a greater level of consumer debt, the ratio variable shows clearly that concern for debt level needs to be directed more toward families in the lower income brackets. To the extent that the ratio variable reflects financial fragility, the lower three income groups were in a more vulnerable position than families in the upper two income groups.

Table 4 provides a comparison between all of the income groups on the major consumer debt variables to indicate where differences were statistically significant. Quintiles 1 and 5 were most likely to stand

Table 1
Percentage of Respondents with Specific Consumer Debt Portfolio Components

VARIABLE	Q1	Q2	Q3	Q4	Q5
Have CredCards	28.2	59.3	77.0	90.3	96.0
Have Bank CardCards	16.0	38.2	61.4	77.4	89.3
Have Store CardCards	23.4	50.9	64.0	80.9	87.3
Have CrCd Balance	14.4	28.0	48.0	56.2	54.9
Have CrCd & CrCd Bal	51.0	47.2	82.7	72.3	67.2
Have VehLoan	9.6	22.2	42.1	50.5	50.9
Have ConLoan	27.0	25.7	25.5	28.6	21.7
Have Home EquityLoan	.6	3.7	2.7	6.7	10.5
Have ConDebt	40.5	51.5	69.5	77.1	75.3

Table 2
Mean Values of Consumer Debt Components for Full Sample

VARIABLE	Q1	Q2	Q3	Q4	Q5
TotIncome	5565.00	13805.00	24744.00	38416.00	95450.00
# Credit Cards	0.35	1.03	1.85	3.55	5.62
CredCard Balance	73.00	350.00	798.00	988.00	1512.00
VehicleLn Balance	235.00	1001.00	2812.00	3969.00	5063.00
Consumer LnBalance	733.00	640.00	1581.00	1611.00	3086.00
HomeEq Balance	4.00	106.00	88.00	371.00	1123.00
Total ConDebt	1045.00	2097.00	5279.00	6939.00	10785.00
Ratio (Debt/Income)	0.21	0.16	0.21	0.18	0.14

Table 3

Mean Values of Consumer Debt Components for Sub-sample Holding Debt in Specific Portfolio Categories

VARIABLE	Q1	Q2	Q3	Q4	Q5
#Credit Cards	1.24	1.75	2.40	3.94	5.85
CredCard Balance	510.00	1251.00	1660.00	1756.00	2752.00
VehicleLn Balance	2454.00	4512.00	6680.00	7865.00	9955.00
Consumer LnBalance	2711.00	2495.00	6208.00	5634.00	14203.00
HomeEq Balance	589.00	2877.00	2189.00	5543.00	10715.00
Total ConDebt	2580.00	4073.00	7599.00	9001.00	14326.00
Ratio (Debt/Income)	0.52	0.31	0.31	0.23	0.18

Table 4

Comparison between Income Groups for Consumer Debt Components

		Full Sample					Sub-sample			
VARIABLE		Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4
# Credit Cards	Q2	D				Q2	D			
	Q3	D	D			Q3	D	D		
	Q4	D	D	D		Q4	D	D	D	
	Q5	D	D	D	D	Q5	D	D	D	D
CredCard Balance	Q2	D				Q2	D			
	Q3	D	D			Q3	D	N		
	Q4	D	D	D		Q4	D	D	D	
	Q5	D	D	N	N	Q5	D	D	D	D
Vehic [illegible] Balance	Q2	D				Q2	N			
	Q3	D	D			Q3	D	N		
	Q4	D	D	D		Q4	D	D	N	
	Q5	D	D	N	N	Q5	D	D	D	D
Consumer LnBalance	Q2	N				Q2	N			
	Q3	N	N			Q3	N	N		
	Q4	N	N	N		Q4	N	N	N	
	Q5	D	D	D	N	Q5	D	D	D	D
HomeEq Balance	Q2	N				Q2	N			
	Q3	N	N			Q3	N	N		
	Q4	D	D	N		Q4	N	N	N	
	Q5	D	D	D	D	Q5	D	D	D	D
Total Debt	Q2	D				Q2	N			
	Q3	D	D			Q3	D	N		
	Q4	D	D	D		Q4	D	D	N	
	Q5	D	D	D	D	Q5	D	D	D	D
Ratio (Dbt/Inc)	Q2	N				Q2	D			
	Q3	N	N			Q3	D	N		
	Q4	D	N	N		Q4	D	D	N	
	Q5	D	N	N	N	Q5	D	N	N	N

D = $p < 0.05$ N = Not significant

apart as significantly different from the other income groups. The patterns of credit use were sometimes similar between the two extreme income groups, however as Table 4 indicates, these two groups were also significantly different from each other for all of the debt balance variables whether looking at the full sample or the sub-samples. Even though their patterns of usage had similarities, the reasons for use or non-use were likely very dissimilar as reflected in the two groups being significantly different from each other on the quantifying variables.

The only variable where all income groups were significantly different from all other income groups was the number of credit cards.

When consumer debt was related to income through the ratio variable, there were fewer significant differences between the income groups. Quintile 1 was significantly different from all other income groups on the ratio variable in the sub-sample. This provides further support for concern that the consumer debt burden may be heavier for this group.

Conclusions

The results of this study yielded little in the way of surprising findings. The amount of consumer debt in most debt categories tended to increase as income increased which was anticipated given that income is a major factor in the amount of credit made available to any specific household.

The patterns of participation in the various debt categories were also related to income with the proportion of households having a specific type of debt increasing as income increased or increasing through the first four income quintiles and then dropping for the highest income group. This drop in percentage of debt holders was likely a reflection of the lack of financial need for credit in the highest income bracket.

If there was an unexpected finding it was that 37 percent of all households in this nationally representative sample had no consumer debt. The non-users of consumer credit were concentrated in the two lowest income quintiles while at least two-thirds of families in the upper three income categories had at least some consumer debt.

While Quintile 5 was significantly different from other income quintiles on the dollar amount of consumer debt, Quintile 1 was significantly different from all other income groups when debt was related to income as a ratio. Clearly, the burden of consumer debt is greater for households with limited income(Table 4).

The high value of the ratio variable (.52) for families having some consumer debt in the lowest income quintile (Table 3) certainly merits further attention. While some households within Quintile 1 might have been able to handle a large amount of consumer debt relative to their income, the mean ratio indicates that many lower income households would likely be financially vulnerable. Further study is needed of the specific characteristics, besides income, of these households and the purposes of the loans in the consumer loan category before questioning the validity of credit granting policies related to lower income borrowers.

The trend toward increased auto leasing, the heavy marketing of both credit cards and home equity loans may have resulted in changes in the consumer debt portfolio since 1989. Further study using more recent data is recommended to assess the impact of these trends on the overall picture of consumer debt.

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Endnotes

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Consumer Interests Annual *Volume 42, 1996*

Determinants of Information Search Behavior: The Case of Saving and Borrowing Decisions

Using data from the 1989 Survey of Consumer Finances, this study examined the effects of household income, human capital/experience with financial institutions, time constraint, and tastes/preferences on the extent of information search. OLS results indicated that education, good health, and experience with financial institutions each had a positive effect on information search; on the other hand, household income, age, full-time work, presence of children, and being single each had a negative effect. The implications of the results for both consumer educators and policy makers are discussed.

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Introduction

As the financial services market for consumer credit becomes more and more complex, it has become increasingly important for consumers to engage in information search and to compare different costs by searching for price information for consumer credit--that is, which source of credit would have the lowest finance charge. Similarly, since there are many different instruments (e.g., certificates of deposit, mutual funds, stocks, bonds, retirement accounts, savings bonds) available to households for allocating their assets, saving decisions have not become easier. Accordingly, it is important for consumers to shop around for the best terms--which financial institutions offer the highest rate of return among the various saving and investment instruments.

Numerous studies have been conducted on information search behavior; however, there have been few studies of the extent of search as it relates to services such as credit and savings accounts. Since characteristics of financial services are different from those of household durable goods or other tangible goods, one might expect search behavior for a service to be different from search for tangible goods. Thus, a consumer's knowledge, demographic characteristics, and expected benefits from search could affect search behavior for financial services differently than for tangible products.

This research attempts to identify the extent of information search behavior in the case of saving and borrowing decisions and seeks to explore factors associated with the extent of information search. When consumers make decisions, it involves both the recall of information that is held in an individual's memory and the acquisition of additional knowledge about products from the external environment. Both internal and external search have been of interest to consumer researchers and educators. However, since internal search is not observable in the available dataset, the focus of this study is external search.

Knowledge of the extent of information search for financial services could provide a general overview of how U.S. families make decisions in today's complex financial markets. The findings of factors associated with the extent of information search could be useful for consumer educators. For example, more knowledge of those factors would aid them in developing educational programs for consumers who do not engage in active information search. Further, implications of the results for policy makers and financial counseling practitioners will be discussed.

Related Literature

There have been numerous studies on the determinants of external search for tangible goods (Bloch, Sherrell, & Ridgway, 1986; Bucklin, 1966; Carlson & Gieseke, 1983; Claxton, Fry, & Portis, 1974; Lehmann & Moore, 1983; Moore & Lehmann, 1980; and Stigler, 1961). Stigler's economics of information framework has been used as an intuitive description of consumer search behavior (Beals, Mazis, Salop, & Staelin, 1981; Carlson & Gieseke, 1983; Claxton, Fry, & Portis, 1974; and Punj & Staelin, 1983). Stigler's theory (1961) suggests that consumers engage in active search only if the perceived benefits of additional information outweigh the cost of acquiring it. Many factors, including demographics and prior product class experience, have been studied in an attempt to account for individual differences in consumers' responses to a given set of information (Brucks, 1985).

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Much empirical evidence supports the view that prior knowledge (i.e., information held in an individual's memory) affects information search activities (Brucks, 195; Jacoby, Chestnut, & Fisher, 1978; Moore & Lehmann, 1980). There are two different views regarding the effects of prior knowledge on the amount of external search. The first view is that the more prior knowledge obtained prior to active search, the less the need for external search, and vice versa. That is, because consumers have prior knowledge/experience in the marketplace, they might have more retrievable internal information and would need to search less. The second view is that the more detailed the memory structure, the more likely it is that consumers can comprehend newly obtained information. In this way, prior knowledge/experience provides an impetus for external search. However, the findings regarding the relationship between prior knowledge/experience and the amount of information search have been inconsistent. For example, the relationship between prior knowledge and amount of search was found to be negative by Moore & Lehmann (1980), and Punj & Staelin (1983), while the relationship was positive in analyses by Brucks (1985), Jacoby, Chestnut, & Fischer (1978), and Johnson & Russo (1984).

While prior knowledge will affect search, search cost will affect the extent of search behavior. Engel, Blackwell, and Kollat (1978) included in their study such costs as time, out-of-pocket monetary expenses, psychological discomforts, the satisfaction forgone by delaying purchase, and the dangers of information overload. On the other hand, it has been contended that search cost is reflected in a person's income: i.e., those with higher incomes have a higher opportunity cost of time (Punj & Staelin, 1983).

Moore and Lehmann (1980) examined the effects of the different variables on external search. Specifically, they focused effects of individual characteristics on search behavior for food. In that study, Moore and Lehmann (1980) found that while experience was highly related to the amount of external search, time pressure was negatively related to external search.

As for other factors affecting information search, Ozanne, Brucks, and Grewal (1992) stated that consumers' information search may be influenced by the new product's similarity or dissimilarity to categories stored in memory. Bloch et al. (1986) also addressed product familiarity as a determinant of levels of prepurchase search. Carlson and Gieseke (1983) examined the relationship between the price paid for a bundle of products and the amount of search. They found that additional search leads to lower prices paid, lower prices encourage purchase of greater quantities, and more purchases provide an incentive for further search, suggesting that the amount of search, price paid, and quantities purchased are all interrelated.

As stated earlier, not many studies have investigated factors associated with information search for tangible goods such as financial product services. Chang (1990) explored factors associated with consumer search behavior for consumer credit. Using the 1983 Survey of Consumer Finances, that study measured the probability of search for credit information. The study included such explanatory variables as size of loan, income, education, age, prior experience, and time scarcity to explain credit information search behavior. The findings suggested that in general, education and size of loan had positive effect on the probability of search. The curvilinear income effect suggested that middle-income consumers are more likely to search for some credit information than lower and higher income consumers. However, age, prior experience, and time scarcity were not significantly related to the probability of search.

Conceptual Framework

Stigler's economics of information search model (1961) provides the theoretical basis for the present study. The major propositions from Stigler's theory are as follows: a) the extent of search is negatively related to the cost of search; b) the gain from search decreases with continued search; c) the larger the quantity of purchase will be, the greater the return from search; and d) the more search that a consumer undertakes, the lower will be the average price paid. According to Stigler (1961), consumers inform themselves as to what is available in the marketplace only to the point where the marginal return of gathering more information equals or exceeds the marginal cost.

Based upon Stigler's model, it can be stated that the extent of search prior to decision making regarding financial services is governed by factors which relate both to the value of the search and the cost of effort involved. However, there are many potentially relevant variables that were not identified in Stigler' model. Different people may have substantially different tastes/preferences regarding the search process; therefore, the costs as well as benefits need not be equal for all consumers. Avery (1994) stated that one limitation in applying Stigler's theory to the direct study of consumer search behavior is that the theory does not explicitly incorporate many non-economic factors identified in other disciplines as having a major impact on search behavior. Although Stigler's model is used as the basis for the present study, four classifications of constructs that affect the extent of information search are considered in order to specify the determinants of search and to generate hypotheses about the tendency of households to engage in search. Therefore, the following search model is presented for the present study:

Information Search = f (Income, Human Capital/Experience, Time Constraint, and Tastes/Preferences). Accordingly, household income, human capital/experience, time constraint, and tastes/preferences are used to help explain why different consumers engage in different levels of search for financial services.

Method

Data and Sample Characteristics

This study used data from a public use tape collected for the 1989 Survey of Consumer Finances (SCF). The survey was sponsored by the Federal Reserve Board and several other federal agencies, and was collected by the Survey Research Center of the University of Michigan. A multiple imputation technique was used to create the 1989 data file, which included five sets of data (Kennickell, 1991). In this study, only the first set of data was used for the analyses.

In this study, the unit of analysis is household. The average reported household income was $33,915. Average age of household heads was 48, while mean value of heads' level of education was 12.4 years. Mean value of the number of financial institutions that households contacted was 2.1, whereas mean value of the number of loans that households currently owed was 0.4.

Of the total sample, approximately 75 percent reported their health status as good. About 30 percent of the sample had no credit cards. While 60 percent of the sample were homeowners, about 40 percent were either renters or had some other housing tenure status. Slightly more than half of the households had no children, and approximately 61 percent were full-time workers. Forty-two percent were single-person households, while 58 percent were married-couple households. As for race, 75.3 percent were White, 12.8 percent were Black, 7.7 percent were Hispanic, and 4.2 percent were of other race.

Dependent Variable

The dependent variable was obtained directly from the survey questionnaire. The extent of search scale ranges from zero (almost no shopping) to ten (a great deal of shopping). In the dataset from the 1989 Survey of Consumer Finances, the question that addressed the extent of search was:

> "When making major decisions about saving and borrowing, some people shop around for the very best terms, while others do not. Where would your family be on the scale?"

The mean level for information search was 5.88 based on a scale of 0 to 10, with 0 representing no search and 10 representing extensive search. Among the 3,143 households, 11.1 percent were never involved in shopping around for the best terms, while 18.5 percent engaged extensively in information search.

Selection of Independent Variables

Income. Reported total household income in 1988 is used as the income measure in the analysis. Shopping around for the best terms can be very time consuming. Regarding the search for information, as income rises, the demand for larger quantities and more types of services leads to an increase in the amount of time spent shopping. On the other hand, time will be more valuable to a person with a larger income. High-income consumers tend to have higher wage rates, so the marginal cost of information search will be higher for high income consumers. Therefore, holding other factors constant, the effect of shopper's income on the extent of search will be determined.

Human Capital/Experience. In previous studies, demographic factors such as age or education (or both) have been used to try to capture the effects of experience, knowledge, and capability. Further, in the human capital literature, health is viewed as a human stock that can improve an individual's efficiency and capability. In addition, shopper's experience with financial institutions might be captured by variables such as the number of such institutions with which the households deals, the number of loans they currently have, whether or not they have credit cards, and whether or not the households own homes.

Time Constraint. A consumer's time scarcity is negatively related to the extent of search. Shoppers with less time will search less not only because they lack time to shop around but also because their relative opportunity cost of time is high. In this study, two time constraint variables, employment status and presence of children, are included in the empirical model. If consumers are employed full-time, they have less time available for information search and will therefore search less. In this case consumers may search more only when there is a relatively large amount of money to be borrowed or saved. Similarly, the presence of children in the household might affect the level of information search because more time would be required for household work.

Tastes/Preferences. Socio-demographic factors might help explain why different consumers engage in differing amounts of search. For example, such factors as marital status and race can influence a consumer's tastes/preferences. A household with a single adult generally does not have the opportunity to specialize as much as a household with two adults. For example, the single adult has to do all the household work from cooking to money management. When making major decisions about saving and borrowing, single adults might have higher opportunity cost of search because of the multiple roles the single householder must play. This might affect their information search behavior. On the other hand, White consumers may differ in their tastes/preferences for information search from other races because of their varying ethnic backgrounds. That is, different racial backgrounds can influence attitudes toward shopping around to find the best terms. White consumers might be more aware of the benefits of search than nonwhites, or the opposite relationship is possible.

Results

Table 1 shows results from the OLS regression analysis. The adjusted R^2 value indicates that the model explains only about six percent of the variance in the extent of search. However, the significant F-value indicates that the model itself is statistically significant.

Table 1
Predictors of Extent of Search (n=3,143)

Independent Variables	Coefficients	S.E.
Constant	6.250	(0.421)[a]
Household Income	-3.21E-6**	(1.4E-6)
Human Capital/Experience		
Age	-0.031***	(0.005)
Education	0.063***	(0.021)
Good health	0.419***	(0.152)
Num. of institution	0.174***	(0.049)
Num. of loans	-0.029	(0.074)
Card owner	0.159	(0.154)
Home owner	0.235***	(0.142)
Time Constraint		
Child present	-0.374***	(0.135)
Full-time work	-0.381**	(0.156)
Tastes/Preferences		
Single	-0.617***	(0.138)
White	0.185	(0.145)
Adj R square	0.06	
F value	15.312***	

[a] Figures in parentheses are standard errors.
** Significant at the 0.05 level.
*** Significant at the 0.01 level.

In this study, income has a significant negative effect on the extent of search in the case of households' saving and borrowing decisions. That is, as household income increases, household heads are less likely to engage in information search activity. This finding might reflect that the marginal cost of information search is higher for high income households than for low income households. It is also the case that the cost of a bad choice may be more serious for low income households.

Among the human capital factors, both age and education are statistically significant, but in different directions. That is, while the age of the household head is negatively related to the extent of information search regarding saving and borrowing decisions, the education of the household head is positively related. Further, health status is statistically significant for the level of information search. Household heads who are in good health are more likely to engage in active information acquisition.

As for the variables reflecting prior knowledge/experience in the financial market, the number of financial institutions with which households have experience positively affects the extent of information search. This finding is consistent with that of a previous study (Moore & Lehmann, 1980). The more the household deals with financial institutions, the more the household shops around for the very best terms in their saving and borrowing decisions. Further, home ownership as a proxy for experience in the financial marketplace is positively related to information search activity. That is, homeowners search more than others when they need to make major decisions about saving and borrowing. However, the number of consumer loans that households currently own and credit card ownership do not play important roles in predicting household information search behavior.

As expected, presence of children and full-time work has a negative effect on information search. Further, among the variables that are used as a proxy for household tastes and preferences, only marital status shows a significant impact on information search. Single household heads engage in less search than do married households. The race variable has no significant role in explaining household information search activity.

Conclusions and Implications

The purpose of this study is to assess underlying reasons for any differences in the extent of information search when consumers make decisions about saving and borrowing. In this study, the extent of search is measured by consumers' perceived effort involved in search activity. The cost-benefit framework provided a basic tool for explaining consumer information search behavior for this study. One of the major limitations of this study resulted from the data that were used. Only one variable was found to provide information search activity in the 1989 SCF data. This variable captured only the self-reported scale on information search when respondents faced borrowing and saving decisions. However, there was no information regarding time frame when this information search activity happened. That is, as a measure of search, the question did not specify it was referring to the number of sources used or the time spent on the search. Further, the scale for the extent of information search also very value. That is, as a measure of search, the question did not specify it was referring to the number of sources used or the time spent on the search. This limitation might suggest directions for future research. For example, a combination of direct observation along with detailed personal interviewing might better explain information search behavior. Or, a more refined set of questionnaire items might be developed.

To explain differences in consumers' external search behavior, previous studies have included factors such as market environment (e.g., number of alternatives, complexity of alternatives, and information availability) or situation variables (e.g., urgency, financial pressure, and special purchase opportunity). These variables might better explain the differences in the extent of search among different consumers. However, all those variables were not available in the dataset. Furthermore, many studies have indicated that the opportunity cost of time is the major cost of information search. In the Stigler's model, hourly wage rate was used as a proxy for opportunity cost of time. However, the dataset used for the present study included only total household income. Thus, although this research utilized Stigler's conceptual framework, researchers were not able to obtain an accurate estimate of opportunity cost of time. The problems with measurement of search and explanatory variables could contribute to the low R-square reported in Table 1.

Given all these limitations, the findings of the study has some noteworthy implications. The study found that older consumers are less likely to engage in active information acquisition. Since older consumers may lack the mental ability to process large quantities of stored memory or may lack the physical ability to actively seek information, consumer educators need to provide them with relevant information and programs, preferably in conjunction with public efforts. Financial institutions might well provide information to older consumers that is particularly easy to comprehend.

The results of this study also indicated that households with young children, households in which the adults are employed full-time, and household headed by a single adult, were all less likely to engage in information search than other households. This would seem to indicate at least one shared characteristic: a shortage of time to devote to information search. Financial management professionals and consumer educators could consider programs targeting these groups with useful and easy-to-comprehend facts about credit and saving instruments for these households to use in pursuing their financial goals and making their saving and borrowing decisions.

In today's complex financial market, the cost of information search may be much greater for a money borrower than a goods buyer because the price of the service is not fully disclosed. This study found that previous experience in the financial market positively influenced the extent of search. This might imply that fuller information disclosure for financial products would help consumers who lack previous experience to understand better the terms and language of the financial market. Furthermore, because the language of the creditor or saving/investment medium is not always simple and clearly stated, educational programs to help consumers understand the terms and their meanings also need to be designed by the public policy. The cost of information search may be greater for the less educated consumers, who can feel overwhelmed by too many possibilities and choices, and provision of information that could be readily understood will reduce that cost. A previous study has indicated that consumers turn to popular consumer periodicals for information relevant to the basic skills needed in the marketplace (Carter, Audrus, & Hanna, 1986). Consumer educators could design programs that enhance these basic skills.

Reducing cost by borrowing from the lowest-cost lender and building financial assets by saving money in the financial institutions which offer the highest returns among the available market alternatives are important aspects of financial management. Overall, programs that minimize the cost or effort required to obtain information on which decisions may be based should be encouraged for households with time constraints, for older households, for less educated household heads, and for households headed by singles, in particular. These consumers need efficient and effective information packaging and delivery strategies, as well as the communication skills with which to seek the information they need in order to make efficient choices in the market.

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The Cost of 'Free' Credit Card Benefits

This paper examines credit cards offering consumers incentives such as cash rebates, discounts on new cars, or travel bonuses. It addresses the question of whether these benefits require consumers to pay higher interest rates and annual fees. Secondary analysis of data on credit card plans reveals that many of these benefits are indeed "free." The major exception is travel benefits, such as frequent flyer mileage.

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Introduction

All-purpose credit cards were first introduced in September 1958, when the Bank of America sent credit cards to 60,000 unsuspecting consumers in Fresno, California (Nocera, 1994) Since that time, the use of credit cards has raised a number of public policy issues. Credit cards were first criticized as immoral for their likely effect on the virtues of thrift and delayed gratification. With each new development in the credit card industry, issues have emerged related to access, price, information, redress, and privacy. Questions like the following had to be answered: Who should be responsible if cards are lost or stolen? Should there be a ceiling on interest rates? What should happen if a consumer believes that a bill contains an error? Should unsolicited cards be sent through the mail? Should buyers who pay with cash be entitled to a discount or, conversely, should credit card users pay a surcharge?

The newest wrinkle with respect to credit cards is "co-branding." Co-branding refers to the linking of a credit card with a business trade-name offering cash rebates, points toward the purchase of goods and services, or other incentives. To date, co-branding has not been viewed from a public policy perspective, although members of the financial services industry debate its value (Auriemma, 1994; "Do Credit Card...," 1994; Nixon, 1994). The purpose of this paper is to identify some policy issues raised by co-branding, present some preliminary but intriguing empirical findings, and suggest directions for future research.

Background

One of the forerunners of today's co-branded credit cards was the Sears Discover Card. First issued in 1986, the Discover Card offered cardholders a rebate of up to 1% of their annual purchases. Note that the Discover Card differs from co-branded cards inasmuch as it competes with Visa and Mastercard and is not offered in conjunction with a traditional bank. Sears served as the issuing financial institution (although this aspect of the Discover Card has changed several times since 1990).

A second precursor of the co-branded credit card was the "affinity card." Affinity cards involve banks marketing credit cards to the constituents of various non-profit organizations (e.g., alumni of a particular university or supporters of an environmental organization). In most cases, the non-profit organization receives a percentage of purchases in exchange for lending their name (and members) to the financial institution. Like co-branding, affinity cards involve a bank partnership through which consumers receive a Visa or Mastercard, but unlike co-branding, the partner is a non-profit organization.

A final element in the direction of co-branding was the offering of the AT&T Universal Card in 1990. Here, AT&T replaced the financial institution in offering consumers a no-fee Visa or Mastercard plus 10% discounts whenever the card was used to make long-distance telephone calls. Within a year of its roll-out, there were 8 million Universal Cards in circulation. By 1995, there were 22 million cardholders (Warner, 1995).

Together, these three innovations allowed for co-branding in which a financial institution teams up with a for-profit business to offer consumers a Visa or Mastercard plus add-on benefits. The affinity cards introduced the idea of partnerships, affinity cards and the Universal Card involved Visa and Mastercard, with institutions other than banks, and the Discover Card and the Universal Card associated consumers premiums or other special bonuses.

Actually, co-branding existed prior to the 1990 release of the AT&T Universal Card. Several airlines offered credit cards in the late 1980s that allowed users to earn frequent flyer bonuses on charges, even when they were not for air travel. Co-branded cards really made an impression on public consciousness when, in September 1992, General Motors, General Electric, and GTE all launched new cards within a 19-day span. The GM card offered a credit toward the purchase or lease of a new GM car or truck, the credit equalling 5% of all charges up to a maximum of $500 per year and $3,500 total. The GM card signed up a million accounts in its first month, 5.5 million accounts in its first year, and nearly 9 million accounts by the end of seventeen months. In 1993, Kroger became the first major retailer to offer a co-branded card. That same year Nordstroms became the first national retailer to offer a co-branded card. What makes Nordstroms' action so interesting is the fact that its co-branded card directly competes with its store card.

Banks are not necessarily happy about sharing their credit card business with their co-branding partners. Some banks have fought back by offering rebates and other benefits linked to their own products. Wells Fargo Bank, for instance, offers 5% rebates applicable to the principal on Wells Fargo mortgages (Lucas, 1993). Nations Bank offers a Start card with rebates applicable to a retirement savings account. Perhaps the ultimate card was rolled out in 1994 by Mellon Bank Corporation--the CornerStone card. It offers a plan by which consumers can earn back all of the interest they've paid if they hold the card for twenty years. Whereas most co-branded cards are especially appealing to consumers who pay off their balances at the end of each month, the CornerStone card appeals to people who revolve their credit card debt (Nixon, 1994).

Consumer and Policy Issues

Are co-branded cards and other cards offering "free" benefits an unmitigated boon for consumers, or do they also present challenges for consumers, consumer educators, and consumer policy makers? At the broadest level, one might ask whether the use of these cards promotes overindebtedness. Consumer use of installment credit has accelerated in recent years, and use of revolving credit has increased faster still (Federal Reserve Bulletin, 1995). The question that is most difficult to answer, though, is how much of the increased use of revolving credit results in greater indebtedness rather than just greater credit volume?

Beyond the general question of the role of co-branded credit cards in the problem of overindebtedness, there is also question of whether these cards constitute an undesirable social subsidy, transferring wealth from the less affluent to the more affluent. In the early 1980s, Senator William Proxmire (1983) argued that cash buyers subsidized credit card users to the tune of $1 billion annually. Proxmire, along with several consumer groups and the Federal Reserve Board itself), argued for the imposition of credit card surcharges, and proposed credit card surcharges. Pressure for the surcharges was sufficiently strong that Congress passed several short-term prohibitions on surcharges.

While interesting, the role of credit cards that offer rebates, premiums, or other benefits in creating overindebtedness or skewing the distribution of income is not addressed empirically in this paper. Rather, we address the practical issue of whether these cards are really "good deals," that is, whether their benefits outweigh any costs (e.g., higher annual fees or interest rates). Several organizations have offered their advice on how to use these cards wisely, including American Express and Bankcard Holders of America (BHA).

American Express is a major issuer of credit cards, including those offering various premiums and incentives. With the exception of its Optima card, American Express' major credit cards do not allow customers to carry a month-to-month balance, so its advice involving credit revolvers can be viewed as reasonably disinterested. In its September 1994 publication, Financial Responsibility, American Express recommends that consumers: (1) select a card that offers points or premiums toward a good or service they actually plan to use; (2) avoid going over their credit limit; (3) understand that they must pay their card balance in full by the payment due date in order for new purchases to be interest free; and (4) check whether cards offering premiums charge a higher interest rate or impose other fees. Although this advice is sound, it is relatively generic and does little to help consumers choose among benefit cards.

Bankcard Holders of America (BHA) is a non-profit organization whose major educational thrust has been to identify low-interest and no-fee credit cards. With the growing popularity of rebate/premium cards, BHA has begun publishing a list of programs and a guide to evaluating these cards. The most recent publication was issued in June, 1995 ("Rebate and Frequent Flyer Credit Cards"). BHA offers much the same general advice as American Express but also develops various scenarios based on different spending and payment patterns for rebate and frequent flyer programs.

The first scenario involves a rebate program and what BHA considers a "typical" consumer. This consumer is a credit revolver with an annual charge volume of $2,750 and a monthly balance of $1,750. In this case, consumers are far better off using a non-rebate card with a low interest rate. The second scenario is for a rebate program used by a non-revolver with $4,000 worth of annual charges, paid in full each month. Here, the benefits of the program may exceed its costs, but consumers should be aware that some rebates do not "kick in" until a minimum number of points are obtained. In virtually every case, the net benefits are small and/or likely to be redeemed in the distant future.

The next two scenarios apply to frequent flyer programs, almost all of which charge annual fees. For the typical spender/revolver, these cards are a poor deal. It will take nearly ten years to earn a "free" ticket with most of these cards. In the meantime, consumers will be paying a higher interest rate for the privilege of acquiring mileage bonuses. In the worst cases cited, consumers would double their annual interest payments, from about $200 to $400. The final scenario involves a revolver who has an annual charge volume of $25,000 and carries a monthly balance of $12,000. Again, the extra interest costs of the frequent flyer card versus a no-frills, low-interest credit card are substantial, amounting to an additional $1000 or more. The 25,000 frequent flyer miles will likely be worth far less than the additional $1000 in interest charges.

The basic thrust of BHA's publication is to emphasize that rebate and frequent flyer cards make sense only for those cardholders who are high spenders and carry no balance. BHA does a good job of explaining the costs of various programs; it does virtually nothing in terms of comparing these costs to any benefits. This comparison is particularly important in the case of frequent flyer programs in which the annual fees may be substantial and the benefits may be highly restricted or long-term. The BHA publication fails to emphasize that, even for non-revolvers, each card carries an opportunity cost--the value of the next best credit card. One must also consider the value of any cash rebates or premiums foregone on other cards.

In sum, analyzing the value of credit cards offering rebates, premiums, or other incentives requires a quantification of all the costs and benefits of using a card. For example, what is the real value of 30,000 frequent flyer miles or a $300 discount on a General Motors vehicle? Further, the analysis must consider differences among consumers, especially differences in the volume of credit activity and the amount of credit that is revolved. What may be the right card for one consumer may be a disaster for another. The next section of this paper presents a preliminary effort to address one piece of this complex puzzle.

Empirical Analysis

To the extent that consumers pay extra for credit card benefits such as cash rebates and travel bonuses, it would be through higher interest rates and annual fees than they would otherwise pay. Banks and other credit card issuers probably determine interest rates and annual fees simultaneously, that is, as part of an overall effort to balance the costs and benefits of various credit cards. Because of this simultaneity, we would ideally like to estimate the following two structural equations:

$$\text{APR} = f(\text{FEE, other cost factors, credit card benefit factors}) \qquad (1)$$

$$\text{FEE} = g(\text{APR, other cost factors, credit card benefit factors}) \qquad (2)$$

Other cost factors would be items such as the length of the grace period and the variable vs. fixed nature of the interest rates. Credit card benefit factors would include the availability of cash rebates, frequent flyer bonuses, automatic insurance on rental cars, and extended warranty protection on purchases.

To make this system estimable using two-stage least squares, we would need to have a minimum of one exogenous variable in each equation that is not in the other equation. This would yield hedonic price equations in which one can directly interpret the influence of each variable on APR or annual fee (e.g., the presence of a travel bonus program is associated with a 3% increase in the APR). Unfortunately, the data available to study various credit card plans do not allow us to estimate the structural equations; there are no data for a variable that would plausibly affect annual fees without also affecting APR.

In the absence of the ability to estimate the structural equations, a fallback position is to estimate the reduced form APR-FEE system. This involves restating the two equations in terms of their exogenous variables only:

$$\text{APR} = f(\text{other cost factors, credit card benefit factors}) \qquad (3)$$

$$\text{FEE} = g(\text{other cost factors, credit card benefit factors}) \qquad (4)$$

The major drawbacks to this approach are the inability to examine the mutual influences of APR and annual fees and, more important for our current purposes, the inability to interpret the coefficients as hedonic price effects.

The data used in this study come from the Federal Reserve System (FRS), which collects and publishes a report every six months on the terms of credit card plans offered by the nation's largest card issuers and any other financial institution that wants to be included in the report. Traditionally, this report was neither widely circulated nor well publicized. In early 1995, however, the Federal Reserve System released the report in the form of a booklet entitled, "Shop: The Card You Pick Can Save You Money." The booklet encourages consumers to comparison shop for credit cards, just as they would for other goods and services.

The data employed in this analysis come from the "Shop" booklet. The credit terms used were those in effect as of January 31, 1995. The unit of analysis is each of the 154 banks listed in the booklet. The list of banks includes the largest card issuers in the country and so can be viewed as reasonably representative of the credit card offers available to consumers nationally.

In addition to the use of a reduced form system, the analysis has a number of other limitations. First, the credit card market changes frequently, so the costs and benefits of a credit card may be less fixed than implied by the booklet. The savvy consumer may be able to find introductory interest rates that are lower than those listed in the booklet or be able to have annual fees waived. Second, the booklet is confined to credit cards that allow consumers to revolve their credit; most American Express cards would not be included, for instance. Third, the 154 banks listed vary in the actual number of cardholders they have enrolled. Thus, each program receives equal weight in the analysis that follows; a preferable approach would be to somehow derive weights for each program based on the number of consumers who carry (or actually use) the card. Fourth, a bank may offer several credit card programs, each varying in its terms. The booklet only lists one set of terms per bank. Finally, the value of the various benefits offered by cards are crudely measured. A credit card may offer a cash rebate, but the booklet does not specify the percentage. Similarly, a credit card user might be able to earn frequent flyer points, but the booklet does not differentiate between airline programs that may vary in their generosity and flexibility.

Keeping in mind the limitations of the analysis, what do the data show? Table 1 shows the variables used in the analysis, including their mean values and standard deviations. Annual percentage rate had a mean of 16.5 and a relatively small standard of deviation of 2.46. APR ranged, however, from 8.50 to 21.00. The average value of annual fees was $12.32, but this value includes the 40% of cards that have no annual fees. Among the 60% of cards with annual fees, the typical charge was $25.

Tables 2 and 3 show the results of an ordinary least squares regression with annual percentage rate (APR) as the dependent variable and a tobit analysis with the size of annual fees as the dependent variable. (The tobit analysis is necessitated by the censored nature of the fee variable, with 40% of cards having no annual fee.) In both equations, the independent variables encompass both cost and benefit factors.

Table 1: Description of Variables *(N=154)*

VARIABLES	VARIABLES DESCRIPTION	MEAN	STD. DEV.
APR	Annual Percentage Rate	16.53	2.46
FEE	Annual Fee in Dollars	12.32	11.17
APRFIXED	APR is Fixed Rather than Variable	.33	.47
GRACE	Grace Period in Days	23.12	7.14
REBATED	Rebates Offered on Purchases, (1=offered, 0=not offered)	.06	.24
WARSECD	Warranty Extension/Purchase Security, (1=offered, 0=not offered)	.22	.42
ACCIND	Travel Accident Insurance, (1=offered, 0=not offered)	.54	.50
TRAVELDD	Travel Discounts, (1=offered, 0=not offered)	.14	.34
RENTAD	Auto Rental Insurance, (1=offered, 0=not offered)	.19	.39
NONTRAD	Non-Travel Related Goods, (1=offered, 0=not offered)	.05	.21
REGISD	Credit Card Registration, (1=offered, 0=not offered)	.12	.32
OTHERD	Other Card Benefits, (1=offered, 0=not offered)	.26	.44

Table 2: Ordinary Least Squares Analysis
of Annual Percentage Rate

VARIABLE	COEFFICIENT	T-RATIO
Constant	15.19	22.08*
GRACE	.06	2.13*
APRFIXED	.97	2.29*
REBATED	-.17	-.21
WARSECD	.76	1.09
ACCIND	-.26	-.60
TRAVELDD	1.98	2.89*
RENTAD	-1.39	-1.97*
NONTRAD	-2.21	-2.12*
REGISD	-.95	-1.33
OTHERD	-.57	-1.20

N = 154; Adjusted R-Square = .069; F = 119.736*; * = $p < .05$

Considering the APR equation, two cost factors are associated with a higher APR--longer grace periods and a fixed (vs. variable) interest rate. Among the benefit factors, travel discounts are associated with a higher APR, while non-travel related goods and services and automobile rental insurance are associated with a lower APR. (The Federal Reserve System does not explain what is meant by non-travel related goods and services. Presumably, this includes credits toward items like new cars, computers, and telephone calls.)

While the association of travel benefits with a higher APR is not surprising, the association of auto rental insurance and non-travel goods with a lower APR is. One part of the explanation may lie in the fact that auto rental insurance is associated with a purchase, while travel benefits may substitute for a purchase (e.g., a free airline flight). This does not account, however, for the lower APR associated with non-travel goods. (Unfortunately, the data set does not give examples of what is included in this category.) Another possibility is that people who value auto rental insurance and credits toward non-travel goods are somehow different from credit card users who seek travel-related bonuses. If the former groups are more credit worthy and/or heavier users of revolving credit than the latter group, then credit card issuers might be willing to compete for their business through both cost (lower interest rate) and benefit (goods and services and auto insurance) incentives.

There are fewer associations in the FEE equation. As one might expect, longer grace periods and a fixed interest rate carry with them the expense of a higher annual fee. The availability of all eight benefit factors is unrelated to the size of the annual fee. Thus, to the extent that consumers must pay a penalty for benefit factors such as travel discounts, the payment is more likely to work through higher interest rates than higher annual fees.

Overall, the results suggest that a number of credit card benefits are available at no interest rate premium if one is willing to shop among credit cards. The only benefit that is likely to involve a higher interest rate is the ability to earn travel discounts.

Table 3: Tobit Analysis of Annual Fees

VARIABLE	COEFFICIENT	T-RATIO
Constant	-18.33	-2.71*
GRACE	.99	3.78*
APRFIXED	7.36	2.45*
REBATED	7.32	1.31
WARSECD	2.04	.42
ACCIND	2.17	.66
TRAVELDD	1.29	.27
RENTAD	-4.07	-.83
NONTRAD	-1.44	-.20
REGISD	-.46	-.09
OTHERD	-2.86	-.84
SIGMA	15.71	12.26*

N = 154; Chi-Square = 28.14*; * = $p < .05$

Conclusions

The research presented in this paper is admittedly preliminary, but it raises questions for future research as well as issues for consumer educators and consumer policy makers. The most immediate research need is to better understand the nature of the tradeoffs between the costs and benefits of credit cards offering rebates, premiums, and other "free" items. Although the research reported here focused on the two cost factors most likely to be relevant to consumers in general (APR and annual fees), interest rates may not be very important to consumers who pay their monthly balance in full. Future research might incorporate data on cards, such as those offered by American Express, that offer benefits but rely exclusively on costs factors other than interest rates.

An additional research challenge is quantifying the value of various credit card benefits. There are anecdotes about consumers who find it profitable to take airline flights just for the value of the frequent flyer miles they earn, but what mental calculus do consumers use to value frequent flyer miles? One promising approach might be to determine consumers' willingness to pay for frequent flyer credits. For example, one might ask a sample of frequent flyer members how much they would be willing to pay in cash for the right to buy 10,000 increments of frequent flyer credits. (This would be analogous to some methods used to judge the value of food stamps.) One would want to examine variation in consumer willingness to pay based on various characteristics of consumers (e.g., business vs. pleasure traveler) and airline frequent flyer programs. Similarly, one would want to quantify the discounts for example, most consumers trade a $500 credit toward their next purchase of a Ford vehicle for $300 in cash today?

A further research issue is whether credit cards that offer consumers rebates or premiums represent a subsidy from less affluent to more affluent consumers. If so, most consumer researchers and consumer policy makers probably benefit from the subsidy and might not want to notice it. Fairness and curiosity nevertheless demand that an effort be made to address the nature and size of any such subsidy.

Consumer educators also have a large task in teaching consumers how to minimize the costs and maximize the benefits of various credit cards. To cite a personal example, I am not a credit revolver, so I recently applied for an American Express card in the hope of earning huge numbers of "free" frequent flyer miles on Delta Airlines. I faced an immediate expense of $55 for the American Express card. Only then did I realize that I wouldn't earn any mileage credits until I had charged $5000 in merchandise and that there was a $25 fee to participate in the Membership Miles program. With my purchasing patterns, this would take me about a year, at which point it would be time to pay the annual fee for the card again plus a $25 fee for the Membership Miles program. Finally, I considered the fact that for every dollar I charged on my American Express card, I would be foregoing the cash rebate I currently earn on another credit card. When I finally sat down to calculate the cost of earning frequent flyer credits, I realized that, even with a 5000 mile enrollment bonus, it would take me five years and cost me about $550 to earn 30,000 frequent flyer miles. And then I'd probably want to take my "free" flight during a blackout period! In short, consumer educators need to help people understand that rebate and frequent flyer programs may not be very beneficial even to consumers who do not revolve their credit, let alone to those who carry a monthly balance.

Finally, consumer policy makers should consider whether the disclosure of the terms of credit card offers is sufficiently clear and conspicuous. Issuers of credit cards are already subject to a plethora of disclosure rules, but we have little evidence that these disclosures are found and used by consumers. If evidence suggests that consumers are experiencing difficulty in making well informed decisions about credit cards, additional disclosure requirements may be warranted.

To date, the proliferation of credit cards offering rebates, premiums, and other incentives has largely gone unstudied. Everyone is attracted to the chance of getting something for nothing, but this particular gift horse merits closer examination.

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Refund Anticipation Loans and the Consumer Interest: A Preliminary Investigation

This preliminary study investigated the behavior, satisfaction and knowledge of 49 consumers who received a refund anticipation loan (RAL) in 1995 or a previous year. Results indicated that nearly half did not realize that quick refunds were RALs. Respondents who received earned income credits (EICs) were more likely to be aware that quick refunds were RALs. Consumer satisfaction declined in 1995 because of the increased length of time it took respondents to receive refunds.

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Introduction

As the name implies, refund anticipation loans (RALs) are personal loans secured by an anticipated refund on the consumer's federal income tax. A number of important features of RALs follow from the elements of this definition:

1. because RALs are *fully secured*, the lender assumes little or no risk;
2. RALs are *short-term* loans, covering only the period while the taxpayer's return is being processed by the Internal Revenue Service (IRS). Indeed, because RALs are typically associated with electronic filing, they are *very* short term;
3. although RALs are provided by private financial institutions, the federal government plays a critical role through the *IRS*.

Because banks generally charge less for secured loans (the rate may be as low as 2 to 3% above that paid on certificates of deposit), one might suspect that RALs would offer the consumer an economical source of short-term credit. The IRS's very involvement, after all, serves to legitimize the activity; given the federal government's role, one might believe that the borrower would be well protected. One would be wrong on both counts, which suggests that RALs deserve closer examination.

That examination must begin with the manner in which refund anticipation loans are marketed. Readers who are unfamiliar with RALs have likely seen advertisements for *fast*, *quick* or *rapid* refunds during income tax preparation season. Those quick refunds are actually RALs, although advertisements give no hint of that. Thus, consumers are initially attracted to RALs by incomplete, potentially misleading, information.

Although there are several steps involved, the mechanics of RALs are relatively straightforward. The tax preparer completes the consumer's return, determining the amount of the refund. The consumer then applies for a conventional loan in the amount of the refund through the bank or finance company which cooperates with the preparer. Prior to 1995, the return would be filed electronically with a request that the IRS issue an immediate *direct deposit indicator* (DDI) to the financial institution making the loan (Kahan, 1995). The DDI guaranteed that no back taxes or other obligations were owed against the refund. With the guaranteed refund as collateral, the financial institution completed the loan and the consumer received his or her refund within three or four days of filing. A week or so later, the refund would be deposited directly with the lending institution to pay off the loan.

Despite the low risk and short time period, RALs are costly to consumers. Representative charges are given in Table 1. Except for the highest categories of refunds, APRs are well over 100%. This is masked by what may seem to be a modest fee. The taxpayer with a $400 refund would pay just $29 for an RAL. However, given the small amount involved and the fact that the actual loan period may be as short as one week, the actual charge is very high.

Although tax preparers became heavily involved in RALs, some tax accountants acknowledged that RALs were harmful to consumers. One accountant called RALs "bad business for the taxpayer," and asked: "why should the accountant be encouraging his client to make a bad decision?" (*Death*, 1995, p. 24). Another went further, writing the Commissioner of the IRS to urge him to "outlaw refund anticipation loans completely" (*Death*, 1995, p. 24).

Table 1

The Cost of Refund Anticipation Loan*

Loan Range	Finance Charge	Loan Amount/APR
$ 300 - 500	$29	$400/204%
501-1,000	49	750/183
1,001-1,500	59	1,250/133
1,501-2,000	69	1,750/111
2,001-2,500	89	2,250/111
2,501-3,000	89	2,750/ 91
3,001-plus	89	3,250/ 77

*Source: Tharpe, 1995.

These sentiments were echoed by many consumer educators, who warned of the high costs of RALs (Center, 1994). The insidious nature of RALs was emphasized by a financial counselor who works with public housing tenants. She noted that the annual federal income tax refund was the only chance many low-income families had to accumulate cash (Clark, 1995). This is especially significant for families receiving the Earned Income Credit (EIC). With a refund, the family simply gets its own money back, but the EIC represents a net gain. The RAL fee erodes any benefit the family may gain from the EIC.

The market for RALs changed in December, 1994, when the IRS announced that because of suspected fraud in electronic filing, DDIs would no longer be issued automatically (Internal Revenue, 1994). Without the guaranteed refund, financial institutions faced increased risks, leading several banks which had issued significant numbers of RALs to cease making such loans. Some large preparers were able to make new arrangements with lenders; H&R Block, for example, offered RALs through Beneficial Finance (Accounting, 1994). The effect of the IRS decision was to restrict the availability of RALs somewhat and lengthen the time it took consumers to receive their refunds.

The time period was increased still further when the IRS announced that it would examine *all* returns claiming an EIC, which had apparently been subject to particular abuse (Kahan, 1995). This change had nothing directly to do with RALs, but since many taxpayers claiming the EIC also opted for quick refunds, there was still an impact.

These changes were made to reduce fraud, *not* for the sake of consumer protection. Ironically, however, they did provide some consumer protection by making RALs less available and less attractive (because of the longer wait). With an apparent focus on the time involved and not the cost, consumers responded very negatively to the changes.

At this writing, the situation with respect to RALs remains fluid. As predicted, the number of returns filed electronically declined in 1995. Nevertheless, RALs did not disappear. Little is known about the consumer perspective. Although RALs appear to be popular with some groups, it is not clear how knowledgeable consumers are. Neither has the impact of the changes made by the IRS in 1995 been assessed.

In response to such questions, this preliminary study was undertaken. The study examined the behavior, satisfaction and knowledge of consumers who received a quick refund in 1995 or a previous year. The objectives were to examine the length of time it took consumers to receive their tax refund, how satisfied consumers were with their quick refund services, how likely consumers were to use quick refund services next year, their eligibility for an earned income credit, and their knowledge of the cost and loan aspect of quick refund services.

Methodology

Sample and Data Collection

Data for this study were collected by graduate and undergraduate students in the Spring and Summer 1995 outside two national discount stores in Georgia. Respondents were asked a screening question to determine whether they had used quick refund services before. Respondents who had used these services were then asked to participate in the study. A total of 49 respondents who had used quick refund in 1995 or a previous year participated in the study.

As is indicated in Table 2, most participants in the study were low-income, nonwhite and female. Income is of special note; over half of the sample was in the lowest quintile of the income distribution. Median income for the sample was below the poverty line for a family of three.

Data Analysis

Information on the measurement of variables is given in the Appendix. Frequencies, percentages and means were used to describe the demographic characteristics of the sample and the behavior, satisfaction and knowledge of respondents who used quick refund services. Repeated measures analysis of variance (ANOVA) and the chi-square test of independence were used to determine relationships among behavior, satisfaction and knowledge.

Findings

Consumer Knowledge

The most striking finding from the study concerned consumer misinformation. Nearly half the sample did not realize that "quick" refunds were actually loans (Table 3), although all applicants presumably had to complete truth-in-lending forms. This question was asked in as neutral a way as possible. Respondents were asked: "Was your refund the kind that involved a loan." Because all quick refunds are RALs, anyone answering "no" was misinformed.

Table 2
Demographic Characteristics (n=49)

Variable	Frequency	Percent	Means (SD)
Age			32.78 (8.96)
Race			
White	21	42.9	
Nonwhite	28	57.1	
Gender			
Male	17	34.7	
Female	32	65.3	
Income($)			
Below 4,999	10	20.4	
5,000-9,000	10	20.4	
10,000-14,999	7	14.3	
15,999-19,999	7	14.3	
20,000-29,000	7	14.3	
Above 30,000	8	16.3	

Respondents' knowledge of the cost of quick refunds was mixed. Respondents reported paying from $6.00 to $165.00 the last time they used quick refund services with a mean of $63.29. However, 34.7% indicated that the amount paid included the tax preparation fee as well as the quick refund service fee. When asked how much the quick refund itself cost, reported amounts ranged from $15 to $85. Based on the information in Table 1, the lower range of figures seems questionable; however, most responses on costs were reasonable.

Table 3
Loan and Cost (n=49)

Variable	Frequency	Percent	Means (SD)
Loan			
No	24	49.0	
Yes	25	51.0	
Cost			63.29 (30.30)
Quick Refund or Total Cost			
Quick Refund	21	42.9	
Total Cost	17	34.7	
Don't Recall	11	22.4	
Quick Refund Cost			41.00 (24.27)

The Earned Income Credit

Given the income levels reported above, it isn't surprising that over half the sample received the earned income credit (Table 4). What is somewhat surprising is the relationship of receiving an EIC and recognition that the quick refund was a loan. In a statistically significant relationship, respondents who received an EIC were *more* likely to be aware that their quick refund was a loan. Because EIC recipients represented the lower range of incomes within the sample, information did not correlate with income.

Table 4
Earned Income Credit (EIC) and Loan (n=49)

Variable	Frequency	Percent
Earned Income Credit		
No	23	46.9
Yes	26	53.1

	Not A Loan		Loan	
	Frequency	Percent	Frequency	Percent
Earned Income Credit				
No	16	69.57	7	30.43
Yes	8	30.77	18	69.23

Chisq 7.351; p<.05

One possible explanation is that respondents who were aware of and applied for the EIC were better informed generally about how the system works. That would include not just information about the IRS, but about related issues of preparation and refunds also. It may also be that because the EIC represents a net gain in income, recipients felt they were paying for the loan with the government's money.

Impact of the IRS's Changes in 1995

Responses from the sample reflect the impact of the procedural changes the IRS made in 1995. Most notably, the use of RALs in 1995 fell by over 30% from earlier years (Table 5). Those who did get quick refunds in 1995 had to wait longer. It took respondents from 4 to 120 days to receive their refunds in 1995, with a mean of 31. That was up sharply from previous years, when the mean was 6 days (Table 6).

As a result, consumer satisfaction declined. In 1995, 46.2% of the respondents were dissatisfied, but only 4.9% were dissatisfied in a previous year. In contrast, only 53.8% of respondents in 1995 were satisfied compared to 95.1% in a previous year. Further, the mean level of satisfaction of respondents in 1995 was 3.15 compared to 4.80 in a previous year. In four out of five cases, respondents indicated that it was the longer wait for their refund which caused their dissatisfaction. This relationship was statistically significant. As shown in Table 6, the mean number of days it took respondents who indicated that they were dissatisfied to receive their income tax refund was 47.182 compared to 15.667 days for those who were satisfied.

Consumers' plans to use quick refund services in the future mirror the satisfaction findings. Fifty-four percent of the sample indicated that they would not use the quick refund service next year while 22.9% said they may use it and 23% said they would use it again. These findings are subject to alternative interpretations. Most respondents indicated they would not use such services again. Despite relatively high levels of dissatisfaction, however, nearly half indicated that they either would or might use RALs in the future.

Conclusions and Implications

The most obvious conclusion from the study concerns consumer knowledge. Nearly half the respondents were unaware of the nature of their refund, a percentage which is hardly consistent with good policy. The need for consumer education is clear but more fundamental changes may be required.

Table 5
Quick Refund and Likely (n=49)

Variable	Frequency	Percent	Means (SD)
1995 Quick Refund			
No	23	46.9	
Yes	26	53.1	
Previous Year Quick Refund			
No	8	16.3	
Yes	41	83.7	
Likely To Use Next Year			
Definitely Not	26	54.2	2.83 (2.01)
Maybe	11	22.9	
Definitely	11	22.9	

One possibility would be to alter the way in which *quick* or *rapid* refunds are marketed. As noted earlier, there is no mention of loans in the marketing of quick refunds. When the first mention of a loan is the required truth-in-lending disclosure, it isn't altogether surprising that some consumers might miss the fact (especially if the disclosure is presented as "just some government forms"). Because this is essentially an advertising question, Federal Trade Commission action may be warranted.

The high proportion of respondents reporting the earned income credit is consistent with the IRS's decision to examine all returns claiming an EIC in 1995. In a sense, the federal government is paying for the cost of the RAL when taxpayers claim the EIC, which frustrates the intent of the transfer. As noted, the link between the EIC and knowledge about the nature of the RAL is not easily explained.

The findings with respect to satisfaction are also consistent with IRS's actions in 1995. It isn't surprising that satisfaction should be linked to time, because there is little reason to go to the expense of getting a "quick" refund if it doesn't arrive quickly. However, it is worth noting that the cost of the service was rarely linked to satisfaction. Consumers seemed willing to pay tremendously high APRs as long as they received their money quickly.

Willingness to pay dearly for *immediacy* links RALs to other services such as rent-to-own programs, pawn shops and check cashing-outlets which tend to be patronized by lower-income consumers. Indeed, immediacy and high implicit APRs are among the common elements which have led some researchers to group these services (including RALs) together as the *alternative financial sector* (Swagler, Burton and Lewis, 1995a; 1995b).

Table 6
Length of Time and Satisfaction

Variable	Frequency	Percent	Means (SD)
1995 Length of Time			30.74 (26.11)
Previous Year Length of Time			6.49 (5.00)
1995 Satisfaction			3.15 (2.03)
Previous Year Satisfaction			4.80 (0.87)
1995 Reasons For Dissatisfaction			
Took Too Long	9	81.8	
Fee Information not Given	1	9.1	
Cost Too Much	1	9.1	
Previous Year Reasons For Dissatisfaction			
Cost Too Much	2	100.0	

	Satisfied (n=12)	Dissatisfied (n=11)	F-Value
1995 Length of Time	15.667	47.182	12.88*

F=12.88; $p < .05$

Note that prior to 1995, respondents reported high levels of satisfaction with quick refunds, even though nearly half of them were unaware of the true nature of the service. This may be somewhat disheartening, but actually relates to consumer motivation. The key element for RAL patrons was speed, not cost. The fact that low-income consumers should be unconcerned about cost suggests that educational efforts need to go beyond the particulars of RALs to more fundamental elements of time preference.

All generalizations, of course, must be qualified by the nature of the sample, which was relatively small, nonrandom and limited to one locale. However, income levels within the sample are representative and the findings with respect to satisfaction are consistent with expectations. Additionally, the key finding on knowledge stands out so clearly, that it may transcend limitations of the sample. Thus, the evidence seems sufficient to suggest that RALs deserve additional attention from those concerned with the consumer interest.

A final point concerns the involvement of the federal government in RALs. It is evident from the findings that IRS involvement was a key element in the success of RALs. When the IRS limited direct deposit indicators, consumer interest declined. One might well paraphrase the comment of the accountant quoted above and ask: "why should the *federal government* be encouraging *taxpayers* to make bad decisions?" That question should give pause to anyone who is tempted to equate government activity with consumer protection.

Appendix: Measurement of Variables

Respondents use of quick refund services was measured by answers to the following two questions: "Did you receive an income tax rapid refund this year?" and "Did you receive an income tax rapid refund before this year?" The length of time it took respondents to receive their income tax refund was measured by asking respondents to indicate the number of days it took them to receive their refund from the time they filed their tax return this year and/or an earlier year.

Satisfaction with quick refund services was measured by two likert-type items. These items were "Using the following scale, circle the number which best indicates how satisfied you were with your quick refund service this year?" and "Circle the number which best indicates how satisfied you were with your quick refund service before this year?" Responses ranged from dissatisfied (1) to satisfied (5). Responses were recoded into two categories which were dissatisfied (1) and satisfied (2). Respondents whose original responses equalled 1 or 2 were asked to list all the things which dissatisfied them about their quick refund. Respondents were asked how likely they were to use the quick refund service next year and responses ranged from definitely not (1) to definitely (5). Responses were recoded as definitely not (1), maybe (2) and definitely (3).

Respondents were asked the dollar amount paid for the quick refund service the last time they used it along with the following two follow-up questions. "Was the amount you paid just for the quick refund service or did that include the cost of tax preparation?" Respondents answered quick refund, total cost or don't recall. "If you answered "Total Cost," what did the quick refund itself cost?" Respondents were asked if their refund was the kind that involved a loan and if they applied for an earned income credit (EIC) the last time they used quick refund. Dichotomous responses were provided to these two questions. Age was a continuous variable and race, gender and income were categorical variables.

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Endnotes

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Household Expenditures on Apparel: A Complete Demand System Approach

Apparel expenditure patterns were analyzed using the Consumer Expenditure Survey (1980-1990) and price data. The Linear Approximation of Almost Ideal Demand System was used. Price elasticity was estimated to be -1.75, but was of greater magnitude for low income households (-2.50 for households with less than $5,000 permanent income). Trade restrictions and regulations that increased prices would have a substantial impact on the quantity purchased by lower income households.

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Winakor (1989) noted the decline in the budget share for apparel in the United States and proposed and evaluated possible reasons. Winakor identified three issues to be addressed. First, a complete set of cross-sectional data that corresponds to the aggregate time series was needed. Second, changes in quality of apparel and limitations of price indexes should be taken into account. Third, apparel expenditure should be analyzed with consideration of confounding effects of expenditure on other commodities.

Most empirical studies have failed to address these issues. Apparel expenditure studies have relied on either cross-sectional household survey data for a certain year or aggregated time-series data from national income accounts. Most cross-sectional Engel studies have used a single equation approach, by assuming that a household's decision about expenditure on apparel was independent of its decision about expenditure on other commodities. For studies using aggregate time-series data, the complete demand system approach with either imposed or testable theoretical restrictions gained in popularity during the last two decades. However, the emphasis of these studies has been on aggregated price and income elasticities, with little attention to the underlying preference structures of households due to data limitations. Thus, most studies based on aggregate time-series data could not shed much light on the effects of social and demographic changes. In addition, there has been a significant discrepancy in the existing estimates of income elasticities between studies using cross-sectional data set with no price information and studies using time series data set with a few social and demographic variables (Mokhtari, 1992).

Addressing all of the above issues, this study attempts to shed further lights on household expenditures on apparel. Two important features make this study very unique. First, a complete set of cross sectional data that corresponds to the time series was used in this study combined with price index data set. Second, apparel expenditure was analyzed using a complete demand system approach, which takes the simultaneity of various household decision into account. The complete demand system approach is more theoretically as well as empirically sound than the single equation approach. By applying a theory-consistent method, reliable estimates for elasticities and demographic effects could be expected.

Review of Literature

Traditionally, food, housing, and apparel have been considered to be the basic necessities of life. In contrast to food and housing, research on determinants of apparel expenditure has been meager (Jackson, 1992; Norum, 1989; Wagner, 1982). However, recent studies (Bryant & Wang, 1990; Courtless, 1987; Mokhtari, 1992; Nelson, 1989; Norum, 1989; Wagner, 1986; Wagner & Hanna, 1983; Winakor, 1986, 1989) provided valuable contributions to the analysis of apparel expenditures. The review of various determinants of apparel expenditures, which include age, household composition, household size, education, employment status, residential location, and race, provided a basis for incorporating demographic variables into the demand system.

In economic theory, income is considered to be the most important determinant of expenditure on any one good. Two measurements of income have been widely used in the analysis of cross-sectional data - disposable personal income (Crockett & Friend, 1960; David, 1962; Dardis, et al., 1981) and total current consumption expenditures (Prais & Houthakker, 1957;

Winakor, 1962; Dardis, et al., 1981; Nelson, 1992). Houthakker and Taylor (1970) found an evidence that total expenditure was more effective in explaining expenditures for specific categories of goods than was disposable personal income. This finding was confirmed by Dardis, et al. (1981). Income elasticities on apparel expenditure have been reported to be positive. However, differences in elasticity values have been noted depending on the definition of income. When disposable income was employed, income elasticities were usually estimated to be 0.5-0.6 (Fareed & Riggs, 1982; Dardis et al, 1981; Houthakker & Taylor, 1970; Bryant & Wang, 1990; Lazear & Michael, 1988)). On the other hand, when total expenditure was used as a proxy for income, income elasticities were estimated to be greater than one (Norton & Park, 1987; Dardis et al., 1981; Norum, 1990; Nelson, 1989). Millican (1967) estimated income elasticities at various income levels using the 1960-61 CES data set. The range of income elasticities was from 0.82 to 1.70, where demand for apparel was most income elastic for the lowest income consumer units, and the demand was most inelastic for middle income consumer units. Garner (1993) addressed the same issue using the Lerman and Yitznaki co-variance method for decomposing the Gini coefficient by factors. From the decomposition, nonparametric estimates of income elasticities were derived. The results showed that consumer units with higher income spent relatively more on apparel than do other consumer units.

Taking a longitudinal approach, Hamburg (1958) suggested that the differences between apparel expenditures of high and low income families were relatively less in the 1950's than in the 1930's. Winakor (1962) tested this proposition using time-series data, 1929, 1931-1941, and 1946-1958, and did not find supporting evidence.

The price elasticity of apparel has been found to be negative in all cases. However, the empirical estimates of price elasticity vary from one study to another. For example, inelastic price elasticity was reported by Winakor (1962) using 1929 through 1958 data set and Norum (1990) using 1929-1987 data set. However, Mokhtari (1992) reported that apparel expenditures were highly price elastic (-1.9) in the short run, while in the long run this elasticity settled at unity (-1.0), using an error correction model for the same period of time as Norum (1990). Bryant and Wang (1990) also found unitary price elasticity for apparel in their study.

Previous cross-sectional studies on apparel expenditures have generally investigated the effects of family composition or stage in the family life cycle, education, occupation, residential location, and race. For a detailed review of the literature of apparel expenditure, see Norton and Park (1986).

Age has been found to have a nonlinear relationship with apparel expenditures (Wagner, 1982). That is, apparel expenditures increased during childhood and adolescence, peaked during early adulthood, and decreased steadily during maturity and older adulthood. Hamburg (1960) also found that age had impacts on income elasticities for apparel expenditures: the income elasticity of apparel expenditures increased steadily with age, and apparel was a luxury good for the older consumer. However, when Fareed and Riggs (1982) compared the income elasticities of older consumers (age 65 or older) with younger consumers' (age 64 or younger), they did not find much difference.

Conflicting results have been found for the impacts of marital status. Household with married heads were found to spend less on apparel relative to other households in the Dardis et al. (1981) study. This result was not supported by the Frisbee (1985) study. Frisbee did find, however, that households headed by males had lower annual apparel expenditures than households headed by females. The presence of a child less than 6 years of age had a negative effect on apparel expenditures when disposable personal income was used, but no effect was found when total expenditure was used as a proxy for permanent income. Wagner and Hanna (1983) found that the presence of a child under 12 years of age did not significantly affect household apparel expenditures.

Apparel expenditures have been found to be positively and significantly related to family size (Crockett & Friend, 1960; Hamberg, 1960; Houthakker & Taylor, 1970; Dardis et al., 1981). While large families have been found to spend less per person on apparel than small families, their budget share for apparel has been found to be larger than that of small families (Britton, 1966; Mork, 1967). Income elasticities of apparel expenditures were found to be the highest for one person households, decreasing among families of two, three, four, and five persons, and then increasing again for families of six or more.

Education of both the household head (Life, 1957; Linden, 1965; Dardis et al., 1981; Wagner, 1982) and the spouse (Hager & Bryant, 1977) was found to be positively related to apparel expenditures. Specifically, Kundel (1976) found that higher levels of education were correlated with more formal apparel worn to work by the husband and with preference of the wife for higher priced garments. Only Hafstrom and Dunsing (1972) found education of the male household head was not significantly related to apparel expenditures.

Household headed by workers spent more on apparel than household headed by unemployed or retired persons (Wagner, 1982; Life, 1957; Linden, 1965; Dardis et al., 1981). Households with employed wives had higher expenditures on apparel than did households with unemployed wives (Deweese & Norton, 1991; Wagner, 1982; Linden, 1965; Dardis et al., 1981). Vickery (1979) also found that wife's employment hours (full- or part-time) influenced apparel expenditures. Because apparel was one of the work-related expenses of women in the paid labor force, increased household expenditures for apparel sometimes were attributed to the wife's job-related wardrobe (Dardis et al., 1981; Vickery, 1979). Moehrle (1990) found that high income nonworking elderly spent higher proportion of their income on apparel compared to high income working elderly.

Significant variations among occupational categories were found to be minimal (Nelson, 1989). However, white collar workers were found to spend significantly more apparel than blue collar workers (Dardis et al., 1981). Nelson (1989) found that apparel expenditures on boys were higher if the mother was in a blue-collar, part-time jobs; otherwise, the mother's occupation significantly affected only her own expenditure.

Cross-sectional data have consistently shown that the highest apparel expenditures occur in the Northeastern United States (Life, 1957; Lindon, 1965; Britton, 1968; Erickson, 1968; Dardis et al., 1981). The lowest expenditures have been found in the South and West. Regional differences reflected variations in income, climate, and lifestyle (Britton, 1966, 1968; Erickson, 1968). Although households in urban areas typically spent more on apparel and were more income elastic than rural households (Dardis et al., 1981; Frisbee, 1985; Life, 1957; Linden, 1965), rural households spent a higher proportion of their budgets on apparel than did urban households. The difference in proportions may be partly attributed to the fact that rural households spent a lower proportion of their budgets on food than did urban households (Britton, 1966).

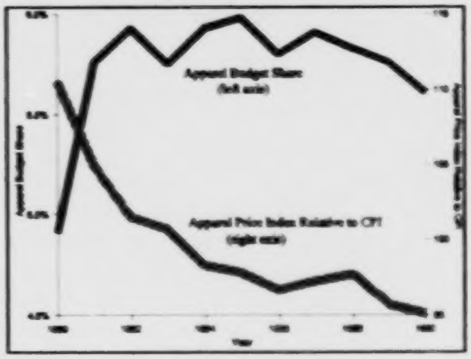
The effect of race on apparel expenditure has been inconclusive. Dardis et al. (1981) and Wagner (1982) found that non-black households spent significantly less on apparel than otherwise similar black households. On the contrary, Linden (1965) found whites to spend more on apparel than nonwhites, while Hager and Bryant (1977) found race to be insignificant.

The Data

Prices were added to a special dataset of the 1980-1990 Consumer Expenditure Survey (CES). See Fan (1993; 1996) for a description of the process of creating the combined dataset for this study. The total sample size was 8651 households who were interviewed for a whole calendar year during 1980 to 1990. Apparel had comparatively low price increase during this time period, 36%. The growth in imported apparel in the U.S. market might have contributed to the low price increases. Figure 1 illustrates the relative price changes for apparel over the 11-year sample period as well as the changes in mean apparel budget share.

Figure 1.

Time Trend of Apparel Price Index Relative to Overall CPI, and of Apparel Budget Share, 1980-90



The Model

The neoclassical consumer demand theory provided a theoretical framework. Given a budget constraint and a utility function representing consumer preferences, the bundles of commodities that maximize consumer utility subject to the budget constraint can be expressed as a function of relative prices of goods, household income and household preferences. Empirically, apparel expenditure analyses based on the neoclassical economic theory have been investigated using either cross-sectional or time-series data. Single equation cross-sectional studies have used different functional forms, including the linear form (Hager & Bryant, 1977; DeWeese & Norton, 1991), semi-logarithmic form (Norum, 1989), and the double-logarithmic form (Dardis, Derrick, & Lehfeld, 1981; Wagner & Hanna, 1983; Frisbee, 1985).

Complete demand system approaches, when feasible, are better than single equation approaches, not only because of the theoretical and empirical soundness, but also because they take into consideration the simultaneity of various household decisions. Since at a given time, a household's decision-making about budget allocation for different commodities and services is likely to be affected by some common unmeasurable or omitted factors, the disturbances in different expenditure equations in the system could be correlated. With the existence of this kind of contemporaneous correlation, the use of seemingly unrelated regressions (SUR) can improve the efficiency of parameter estimation compared to separate least squares estimation (Judge, et al., 1982).

A complete demand system approach was used to analyze the budget allocation patterns of the households in the sample. Incorporating 23 demographic variables into the demand system facilitated capturing the many faceted effects of household characteristics on household budget allocation behavior. Also, mean income and price elasticities could be estimated and compared across groups of households with different characteristics. Given that many demographic variables were incorporated into the demand system, it was important to select a simple but flexible demand system to execute the analysis. After careful examination of different alternatives, the linear approximation of the Almost Ideal Demand System (LA/AIDS) first introduced by Deaton and Muellbauer (1980) was selected for this study. Demographic variables were incorporated using a method similar to Blundell, Pashardes and Weber (1993) and a two-stage tobit method was used for correction of limited dependent variable problem. Specifically, by denoting E_i as the expenditure on commodity i, D as a vector of demographic variables, P as a vector of prices, M as total expenditure, a probit equation was estimated for each expenditure category at the first stage:

$$Prob(E_i>0) = \tau_i\ (M, P, D) = \Sigma\tau_i X \qquad (1)$$

The estimated ϕ_i (the density function of the standard normal distribution evaluated at $\Sigma\tau_i X$ for commodity i) and Φ_i (the cumulative probability function of the standard normal distribution evaluated at $\Sigma\tau_i X$ for commodity i) were then incorporated into the second stage demand analysis (Maddala, 1983; Greene, 1990).

Finally, the LA/AIDS system with demographic variables and with correction for limited dependent variable was then specified as:

$$\begin{aligned} W_i = {} & \alpha_{i0} + \sum_{h=1}^{m} \alpha_{ih} D_h + \sum_j \gamma_{ij} \log P_j + \\ & (\beta_{i0} + \sum_{h=1}^{m} \beta_{ih} D_h) \log(M/P^*) + \qquad (2) \\ & \sigma_i[\phi_i - (1-\Phi_i) \sum_{h=1}^{m} \tau_{ih} X_h] \end{aligned}$$

Parameter restrictions concerning adding up, homogeneity and symmetry were imposed in the final demand system estimation. Homogeneity and symmetry restrictions were tested and were not rejected with this data set. Elasticities were computed using the bias-corrected formula derived by Alston, J.M.; Foster, K.A.; Green, R.D.(1994).

The major dependent variable of concern was the budget share for apparel, including men's, boys', women's and girls' apparels, footwear, and other apparel products and services. Since household decision-making was treated as a simultaneous process, twelve other expenditure categories were also included to form a complete demand system. These other twelve expenditure categories were: food, food away from home, shelter, utility, household equipment and operation, entertainment, transportation, health care, alcohol, tobacco products, and personal care.

The income variable used was the BLS defined total expenditure minus social security payment, cash contribution, life insurance payment, and net vehicle outlay. The rationale for subtracting social security payment was that for most households, social security payment was relatively fixed for a given period of time and was withheld from their take-home income and thus was not available for their normal expenditure. The exclusion of cash contributions, life insurance payment and net outlay for vehicle purchase was mainly due to data set limitations.

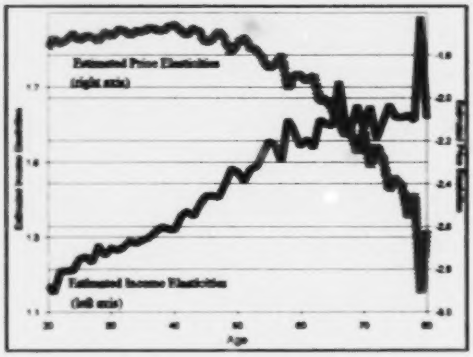
While the definitions of total expenditure and price variables were well documented and relatively standard in budget allocation studies, a wide variety of demographic variables have been used. The selection of demographic variables in the LA/AIDS demand system closely followed the results of previous studies, while data availability and equation system integrity were also taken into consideration. Demographic variables entered into the model included ethnic dummy variables, age, gender, education dummy variables, occupation dummy variables, labor market participation dummy variables, number of earners, family composition dummy variables, tenure (own with or without mortgage or rent), region dummy variables, and a continuous year variable to capture any continuous time trend. Age was interacted with the year variable to capture possible cohort effects.

Results and Discussion

The LA/AIDS demand system was estimated using an iterative seemingly unrelated regression (ITSUR) method. About nineteen percent of variances of the budget share for apparel were explained by the set of independent variables. The R^2's for other commodities in the demand system ranged from 0.10 for education and 0.48 for food at home. To ease comparison, quantity elasticities are presented. The estimated mean income elasticity of quantity was 1.46. The own-price elasticity was -1.75, indicating apparel was very price elastic during the sample period, and this result is consistent with Mokhtari (1992).

Figure 2 shows the relationships between age and the estimated income and own-price elasticities for apparel. Everything else controlled, the older the household reference person, the more income and price elastic the household. Households with a reference person older than 65 were the most income and price elastic group among all age groups, with an income elasticity of 1.63 and an own-price elasticity of -2.14, on average. Younger households seemed to have both low income and own-price elasticities. This may be because young households were starting to build their wardrobe collection, so they were less sensitive to income and price changes, whereas for old households, purchasing additional apparel was more like an addition to their collection, thus could afford the time to look for good value.

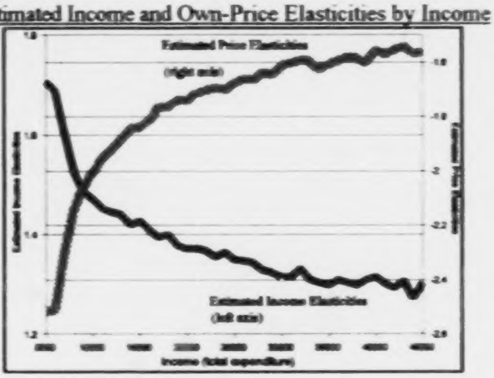
Figure 2.
Estimated Income and Own-Price Elasticities by Age



Estimates of income and own-price elasticities by permanent income (total expenditure) are presented in Figure 3. Low income households were much more income elastic (1.87 for households with total expenditure less than $5,000) than households with high total expenditure level (1.27 for households with total expenditure more than $50,000). In terms of own-price elasticity for apparel, again, households with total expenditure below $5,000 were much more price elastic (with an average own-price elasticity of -2.50) than households with higher total expenditure levels, everything else controlled. This shows the low income group had an income elasticity for apparel about 40% higher than the highest income group, and a price elasticity about 80% higher than the highest income group.

There were small differences between ethnic groups in estimated mean elasticities. On average, White and Black non-Hispanic households had higher levels of income elasticities (1.47 and 1.48, respectively) than otherwise similar Asian and Hispanic households (1.34 and 1.21, respectively). In terms of own-price elasticities, Asian and White households were more price elastic (-1.80 and -1.76, respectively) than otherwise similar Black and Hispanic households (-1.69 and -1.67, respectively).

Figure 3.
Estimated Income and Own-Price Elasticities by Income



In order to understand how demographic variables affect households' budget share for apparel, marginal effects of demographic variables were estimated. The marginal effects of demographic variables were estimated for every household in the sample, and then means were estimated. Age, gender and ethnicity of the head had significant marginal effects on the budget share for apparel. Household composition, tenure choice and one of the location variables also showed significance. The estimated mean marginal effects for demographic variables are presented in Table 1.

Conclusions, Implications and Limitations

With the use of 11-years of CES data with price information, this study applied a LA/AIDS demand system approach with 23 demographic variables to analyze the patterns of household expenditure on apparel. The mean income elasticity for apparel in the U.S. from 1980-1990 was 1.46, suggesting that apparel

Table 1
Estimated Marginal Effects of Demographic Variables on the Budget Share for Apparel

Variable	Marginal Effect	Significance Level
Age (Per 10 years)	0.02%	***
Female	0.76%	**
High school diploma	2.04%	*
Some college	0.95%	*
College degree	-0.66%	*
Number of earners	-0.27%	*
# children age < 5	-2.77%	***
# age 5-17	-0.97%	***
# age 18-64	0.59%	**
# age >64	-0.16%	*
Work full-time	2.74%	**
Self-employed	1.14%	*
White collar	0.67%	*
With home mortgage	1.30%	**
Own without mort.	0.41%	*
Year	-0.24%	*
Asian	-0.32%	*
Black, non-Hispanic	1.24%	**
Hispanic	0.65%	***
Midwest	0.28%	*
South	-0.01%	*
West	-2.91%	***

***	Both coefficients in the demand system are significant at least 90% level.
**	One of the two coefficients in the demand system is significant at at least 90% level.
*	Neither of the two coefficients in the demand system are significant at at least 90% level.

was a luxury good. The mean own-price elasticity for apparel was -1.75, suggesting that apparel was very price elastic. Households with low levels of total expenditure were more income and price elastic compared to household with high levels of total expenditure. The older the reference person, the more income and price elastic the household. These results suggest that trade restrictions and regulations that increase the price of apparel will have the largest relative impact on the amount of apparel consumed by low income and elderly households.

There are also implications for apparel marketers. By understanding differences in preference structure and budget allocation patterns of different subgroups of consumers for apparel consumption, marketers can tailor appropriate strategies to attract different types of consumers. For example, since older consumers are more price sensitive, it is important to provide apparel at lower prices to attract this group of consumers. On the other hand, younger consumers are relatively less price sensitive, which may indicate that there are important factors other than price that influence younger consumers' spending patterns. Reducing prices may generate a relatively larger response for Asians and Whites than for Blacks and Hispanics. Low pricing can generate a large impact on apparel quantity purchased by low income consumers.

The results from this study may be useful for future apparel expenditure studies. For example, in many apparel studies, the sample size is usually not very large so some of the ethnic groups, such as Asian-American households and Hispanic households, have to be combined with other large ethnic groups for the analysis to be executable. The results from this study suggest that when apparel expenditure is of concern, Black and Hispanic households tend to have higher budget shares for apparel than otherwise similar White non-Hispanic and Asian-American households. Further F-tests showed that the apparel expenditure patterns were significantly different between Black and White households, Black and Asian households, Hispanic and White households, Hispanic and Asian households, but not significant in any other two group comparisons. Therefore, when combining ethnic groups are necessary, in analyzing apparel expenditures, Black and Hispanic households can form one group, and White and Asian households another.

Another example of results important for future research is how to incorporate age and income variables. The results of this study suggested that the relationship of budget share for apparel and age or total expenditure are highly nonlinear. Therefore, when including these variables, nonlinear forms should be used rather than simple linear forms to make the estimation results more realistic.

The most important contribution of this study is that it is the first attempt to estimate not only income elasticities, but also price elasticities from household-level data and to compare them among different social subgroups. Given that the analytical method of this study was consistent with the underlying microeconomic theory, the plausibility of the estimates was enhanced and implications derived based on the estimation results were more reliable.

This study is subject to several limitations. The most serious problem was the data source. No consistent household level price data were available, so price data were constructed using two different sources, with a higher level of aggregation than desired. The assumption that households in certain region/city size combinations faced the same price might not be realistic. Furthermore, given that the expenditure categories defined in this study are very broad, and households with different economic and socio-demographic characteristics could have purchased different commodity combinations, to what extent the average price indices matched the real prices consumers faced is an unanswered question.

In conclusion, a better, more consistent and comparable data source is crucial to improve the research on household budget allocations patterns for apparel consumption. A theoretically plausible, econometrically flexible, yet executable demand system is also desired to provide better, yet simpler results.

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Consumer Interests Annual *Volume 42, 1996*

An Analysis of Household Expenditures on Educational Goods and Services

This study uses the 1991-92 BLS Consumer Expenditure Survey to examine the impact of economic and demographic factors affecting household expenditures on educational goods and services. Results of the study suggest that income, age, number of automobiles, contribution to educational organizations, family size, family type, education level, occupation, gender, and region are statistically significant factors in explaining variation in educational expenditures among households in the United States.

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Introduction

Education is an important component in the formation of human capital. Increasing human capital has benefits for the individual, the family, business, and the community because it increases the quality and/or quantity of production. According to human capital theory, education provides a vehicle for building stocks of human capital (Bryant, 1990). There is a large body of literature which supports the notion that an increase in human capital can make one more productive (both in quantity and quality) in the home and the workplace (Bryant, 1990; Becker, 1975; Mincer, 1970;). Individuals who work to enhance their human capital also increase the human capital stocks of the household unit to which they belong. Education is one avenue for building human capital stocks. Children, in particular, are greatly influenced by their parents' human capital. For example, Kane (1994) found parental education levels to be a major determinant in children's enrollment in college. One indication of whether families partake in such human capital producing activities is the dollars they allocate to the consumption of educational goods and services.

The purpose of this study is to examine how U.S. households allocate their dollars toward educational goods and services, and to determine which factors play a significant role in this process. Studies in the past have focused on education expenditures of specific family types or budget shares (as opposed to level of expenditure), but there has not been a study which focuses specifically on the level of education expenditures including all household types. Understanding the factors that define the household's ability and willingness to purchase educational goods and services can provide insight into human capital formation behavior within the family unit and can aid in policy decisions regarding education. For example, if education expenditures are sensitive to household preferences, then government programs should be devoted to encouraging households with "low" educational preferences to partake in educational opportunities to build human capital stocks. Similarly, if education expenditures are sensitive to changes in income, educational policy should reflect a consideration of such evidence so as not to limit the ability of families to partake in human capital formation.

Review of Relevant Literature

Two recent studies focus specifically on education expenditures and are germane to the research at hand. Examining education expenditures for female-headed versus married couple households, Yang (1995) found no statistically significant differences occur between these two groups. Only income was a statistically significant and positive factor for education expenditures for both groups (Yang, 1995). For female-headed households, age, race, occupation of the head, as well as housing tenure were found to be significant factors in explaining variation in household education expenditures. A positive relationship was found between age and education expenditures, non-whites were found to spend more on education than whites, and heads employed in professional, sales or technical occupations spent more on education than did heads employed in other occupations. Also, home owners (of female-headed households) were found to spend more on education than those female-headed households which did not own homes (Yang, 1995). For married couple households, those heads with a high school education spent an average of $633/year less on education than heads with a graduate school level of education. In addition, married-couple households located in the

Northeast region of the country spent more on education than similar householders located in other regions of the country (Yang, 1995).

When examining the education ratio (ER), that is, dollars allocated to education out of the "non-necessity" (i.e., all expenditures *excluding* food, shelter and clothing) budget, Huston (1995) found that age, income, family size, race and region were all important determinants in explaining variation in the household education ratio. The age variable was found to have the greatest impact on the ER, with younger households having a decreasing ER until the head reaches 40 years of age (on average) and then the ER was found to increase until the head turns 67, when the ER begins to decline again (Huston, 1995). Statistically significant and positive relationships were found between the ER and education level of the head as well as ER and family income. Similar to the Yang (1995) finding for regional differences, Huston (1995) found that the ER in the Northeast was higher compared to those in the rest of the nation.

Other somewhat related studies, which do not specifically focus on education expenditures but do include reading expenditures, may provide some additional insight for selecting appropriate variables to include in the present research. Two studies, both comparing expenditure patterns between single-parent and two-parent families include the expenditure category of reading and recreation (Horton & Hafstrom, 1985; Abdel-Ghany & Schwenk, 1993). The independent variables in both studies which had a significant impact on explaining variation in reading/recreation expenditures were income, family size, race, location, housing tenure, and age and education of the household head. In both studies, income had a significant and positive effect on reading/recreation expenditures, for both single parent and two-parent families. Both studies also found that Black headed households spent significantly less on reading and recreation than Non-Black headed households. Horton and Hafstrom (1985) found age and family size to have negative effects on reading/recreation expenditure for two-parent families while Abdel-Ghany & Schwenk (1993) found the same result for age but no significant result for family size. In terms of location of household, Horton & Hafstrom (1985) found that households located in the northeast region and Abdel-Ghany & Schwenk (1993) found that households located in the southern region, spent significantly less on recreation and reading than did households located in other areas of the United States. This effect appears to be quite the opposite from the studies specifically related to education expenditures. Education was found to have no significant effect according to Horton & Hafstrom (1985) while Abdel-Ghany and Schwenk (1993) found that education had a positive effect on recreation and reading expenditures for both single and two-parent families. Finally, Horton & Hafstrom (1985) found that home owners spent more on recreation and reading than did renters, all other variables held constant.

Based on measures of permanent income, Horton and Hafstrom (1985) report income elasticities (for recreation and reading) of greater than two for both single-parent and two-parent families. In another study, Abdel-Ghany & Foster (1982) found education has an income elasticity greater than one. Therefore, education expenditures appear to be relatively sensitive to income changes.

The Models

Theoretical Model

This research draws on the economic theory of consumer demand. Specifically, this research uses a modified Engel function which expresses the level of education expenditures (EDEX) as a function of household income (I) and a set of household demographic (HH) variables:

$$\text{EDEX} = f(\text{I}, \text{HH})$$

Household income represents the household's ability to purchase EDEX, while the household demographic variables are hypothesized to serve as proxies for household tastes and preferences for the consumption of market-purchased education goods and services.

Empirical Model

The statistical model used in this research is multiple linear regression. The specific estimating equation was estimated via ordinary least squares (OLS) regression techniques using SAS version 6.08 and takes the following functional form:

$$\text{EDEX} = \beta_0 + \beta_1 \text{I}_i + \beta_2 \text{I}^2_i + \beta_3 \text{I}^3_i + \beta_4 \text{HH}_i$$
for all $i = 1, \ldots, n$

In addition to the income variable, an income-squared variable and an income-cubed variable were included in an attempt to capture the varying effects of income over the range of income levels within the sample selected. The set of household characteristic variables (HH) used in this study include family size, level of assets, number of automobiles, and number of earners in the household unit. Also included as dummy variables are region, family type, housing tenure, contribution to educational organizations, and the education level, race, gender and occupation of the household head. A description of all variables used in the analysis, along with the sign hypotheses of the independent variables, will be discussed in the following section.

Variables and Hypotheses

Education Expenditures (EDEX)

The dependent variable in this analysis is total annual household expenditures on educational goods and services (EDEX). This is a continuous variable, measured in dollars, that includes expenditures on tuition, school books, school supplies and equipment, college expenses for students living outside the household, newspapers, magazines, periodicals and books[2]. This measure of EDEX includes both expenditures for children and expenditures for adults.

Household Income

Household annual income is proxied by total annual consumption expenditures rather than using a measure of current income[4]. This measure of income follows the work of Houthakker and Taylor (1970) who demonstrate that total consumption expenditures (an estimate of permanent income) is a better statistical predictor of expenditures in a category of goods and services than are measures such as before-tax income and after-tax income. Also included in the analysis are income-squared and income-cubed. Because income has been found in previous studies to be a normal good, it is hypothesized that there will be a positive relationship present between income and education expenditures. The squared and cubic terms are included in the analysis because this relationship is hypothesized to vary over the range of income.

Assets and Housing Tenure

Measures of assets and housing tenure were included in the analysis to capture the effect of actual and potential wealth available to the family for education goods and services. Assets, included as a continuous variable, were measured by summing holdings in savings accounts, checking accounts, and the value of any stocks and/or bonds at one point in time at the end of the interview process. Housing tenure was measured as a dummy variable; i.e. whether the household owned their home or not. Home ownership may represent the household's ability to secure funds in order to finance such things as education. The effect of assets could be hypothesized in either direction. A negative relationship between assets and education may reflect the use of assets to fund education. On the other hand, over time, both home equity and assets could have a positive affect on educational expenditures. Households which spend more on education are developing more human capital, and therefore have an increased potential to accumulate assets and equity. But, an analysis of the effects of education expenditure over time is beyond the scope of this research.

Family Type

Family type was created via a dummy variable with four categories.

1. Husband-wife families with school-aged children (where the oldest child is greater than 5 years of age, but not older than 17 years). This category was used as the reference category.
2. Single parents (both male and female) with at least one child less than 17 years of age[5].
3. Husband-wife families with no children or very young children (the oldest child is less than 6 years of age).
4. All other family types (including single persons, families with adult children, and other non-traditional family types such as grand-parents raising grandchildren).

It is hypothesized that households including school-aged child members will have greater expenditures on educational goods and services compared to other types of families.

Family Size

Family size is measured by the number of persons in the household unit. Horton & Hafstrom (1985) found that family size had a negative impact on the dollars allocated to recreation/reading. Yang (1995) found that family size did not have a significant effect on educational expenditures, while Huston (1995) found that family size had a significant and positive effect on the education ratio. Given this mix of empirical findings, it is difficult to predict the direction of impact. Family size could increase the education expenditures if more dollars are being spent per capita; however, family size can also put a strain on the family budget and education expenditures may actually decrease as a result.

Contributions to Educational Organizations

Contributions to educational organizations are included as a proxy for preference toward educational activities. It is reasonable to assume that families that are willing to donate financial resources to such organizations could be more likely to purchase education goods and services. Therefore, it is hypothesized that contributors (coded Yes=1) will spend more on education compared to non-contributors (No=0).

Number of Earners

This continuous variable measures the number of earners within the family unit to determine if there is a relationship between the number of income earners and the expenditure on education goods and services. If the number of earners represents a measure of human capital stock already present in the household, there may be a negative relationship between this variable and the dependent variable, as the need for enhancing human capital is not as urgent. But, this may also reflect a propensity toward building human capital and could be positively associated with education expenditure by the household.

Number of Automobiles

This variable is measured as the number of automobiles a family possesses and is included as a continuous variable. Number of automobiles is included to represent an "access" to education for the household. It is hypothesized that the greater access a family has to educational goods and services (i.e., convenience) the more likely they will be to purchase such goods.

Region

Region is measured as a set of categorical variables: rural, urban Midwest, urban South, urban West, and Urban Northeast (the reference category). Regional variables measure the independent effects of differences in the dependent variable which are attributed to the specific locale of a particular household unit. Households located in different regions may vary in terms of opportunities available, cultural composition, and/or the prices associated with educational goods and services.

Age of Household Head

Age of the household head is a continuous variable, measured in years. Although Yang (1995) argues that the hypothesized effect of age on education should be negative (according to human capital theory), the findings from her study indicate the opposite result. While this result may seem to contradict human capital theory, the unit of analysis must be considered before drawing this conclusion. Yang (1995) focused on the household and not the individual thus it would seem reasonable to hypothesize a positive relationship between education expenditure and age of the household head. Over time, the need for education in a family with children generally increases. Although Huston (1995) found age of the household head (family life cycle) to have a varying pattern regarding the ratio of education expenditures, it does not directly follow that the level of expenditure should exhibit a similar pattern, especially since family type is better controlled for in the present research. Therefore, age is hypothesized to have a positive relationship with education expenditures.

Education Level of Household Head

The education level of the household head is measured by five categorical variables - less than high school, high school, some college, a baccalaureate degree, and graduate school. The "less than high school" category is the reference category. Yang's (1995) results showed rather weak support for the education variable finding that only heads from married-couple families with a high school level of education spent significantly less on education compared to similar heads with the most advanced level of education. Huston (1995) found rather strong evidence from analyzing education ratios that education, in fact, begets education. It is therefore hypothesized that there will be a positive relationship between education and education expenditures.

Occupation of Household Head

Occupational categories were collapsed into two main groups -- Professional/Managerial occupations and all other occupation types. It is conceivable that household heads with professional occupations have reaped the "biggest" reward from obtaining a formal education, so they may be more willing to encourage family members to purchase educational goods and services. Yang (1995) found that for a sample of female headed households, heads with professional vocations spent significantly more on education compared to similar households in which the head was employed otherwise. But, it can be argued that households with professionals as heads have considerable stocks of human capital and do not require additional expenditures on formal education goods and services. However, it is hypothesized that there will be a positive relationship between professional/managerial occupations and expenditures on educational goods and services.

Race of Household Head

Race was measured as a dummy variable coded as Black or Non-Black. Due to previous studies which found that Black-headed households tend to have significantly different spending patterns than Non-Black-an impact on explaining variation in the education expenditures. Because Black-headed households typically spend fewer dollars on recreation/reading, it could be hypothesized that Black-headed households, on average, will have lower levels of education expenditure than their Non-Black headed counterparts. However, Yang (1995) found that Black-female-headed households spent significantly more on education than did Non-Black-female headed householders. There was no significant race effect for the married couple households in Yang's (1995) study. Therefore, the effect of race remains to be answered through empirical analysis.

Table 1. Descriptive Statistics of the Sample (N=1849)

Variables	**Mean**	**Std.Dev.**	**Min.**	**Max.**
Education Expend	674.93	2,530.50	0.00	68,267.00
Family Income	29,179.19	19,801.48	3,362.95	239,496.90
Age	50.13	17.15	19.00	90.00
Family Size	2.70	1.56	1.00	12.00
Level of Assets	15,681.85	34,957.26	0.00	302,000.00
# of Autos	1.28	0.96	0.00	7.00
# of Earners	1.39	1.02	0.00	6.00

Variable	**Proportion**	**Variable**	**Proportion**
Family Type		Tenure	
Marrieds, kid >6*	0.27	Own	0.71
Single Parents	0.05	Not Own*	0.29
Marrieds, kid 0-6	0.29	Region	
Other Families	0.39	Midwest	0.24
Contributions		Northeast*	0.19
Yes	0.09	South	0.25
No*	0.91	West	0.21
Education of Head		Rural	0.11
< High School*	0.22	Race of Head	
High School	0.31	Black Head	0.11
Some College	0.23	Non-Black Head*	0.89
College Degree	0.13	Gender of Head	
Graduate School	0.11	Female*	0.33
Occupation of Head		Male	0.67
Professional	0.22		
All other*	0.78		

*Indicates reference category

Gender of Household Head

Gender is included as a categorical variable, with female headed households as the reference category. Given that females are typically faced with an earnings disadvantage in the labor market, their perceived need for human capital may be greater than that of male. It is hypothesized that female-headed households will spend more dollars than male headed households, all other factors held constant.

Data

The sample used in this analysis was selected from the 1991-92 BLS Consumer Expenditure Survey (U.S. Department of Labor, 1994). There are 1849 households in the sample, each having annual data and complete asset information. All data used in this analysis were obtained from the Consumer Unit Characteristics and Income files (FMLY).

Statistics describing the variables of the sample are summarized in Table 1. On average, households in the sample spend approximately $675.00 per year on education goods and services. The median education expenditure for the sample is $173.00, indicating that this variable is positively skewed.

Results

The OLS regression results are presented in Table 2. In addition to the regression coefficients and P-values, standardized coefficients are reported as a measure of the relative impact of the variables included within the model. The results, deemed to be significant at a level of five percent, are presented in bold type within Table 2. Of the 24 variables included in the analysis, 14 produced statistically significant results. The F-value and its associated probability indicated that the model is indeed significant and the adjusted R-squared indicates that the independent variables in the model are accounting for about 44% of the variation in the dependent variable, education expenditures.

Table 2. OLS Regression Results (N=1849)

Variables	**OLS Coefficient**	**P-Value**	**Std. Coefficient**
Family Income	**72.0611**	**0.0001**	**0.5639**
Income-squared	**-1.2143**	**0.0001**	**-1.1408**
Income cubed	**0.0081**	**0.0001**	**1.2964**
Age	**7.2086**	**0.0300**	**0.0489**
Family Size	**-81.0272**	**0.0409**	**-0.0498**
Level of Assets	-0.0008	0.5752	-0.0109
Number of Autos	**235.1640**	**0.0001**	**0.0890**
Number of Earners	51.5805	0.4226	0.0209
Single Parents	-188.4528	0.4314	-0.0167
Marrieds, kid 0-6	**-515.9878**	**0.0001**	**-0.0925**
Other Families	**-442.3831**	**0.0022**	**-0.0856**
Own Home	-102.2074	0.3634	-0.0183
Midwest	**-249.5685**	**0.0658**	**-0.0419**
South	-128.0974	0.3396	-0.0219
West	**-460.4252**	**0.0011**	**-0.0735**
Rural	-82.9303	0.5993	-0.0102
Contributions	**597.7309**	**0.0005**	**0.0666**
High School	19.4858	0.8811	0.0036
Some College	104.9565	0.4766	0.0176
College Degree	-26.0130	0.8875	-0.0035
Graduate School	**551.7910**	**0.0060**	**0.0677**
Professional	**233.9033**	**0.0633**	**0.0385**
Male	**-257.7147**	**0.0249**	**-0.0480**
Black Head	79.7512	0.5993	0.0098
Intercept	-467.4519	0.1653	0.0000
Adj. R-Squared	**0.4402**		
F-value	**61.5490**	**0.0001**	

The standardized regression coefficients indicate that, of all the variables included in the model, income explains the largest degree of variation among household education expenditure levels. Figure 1 illustrates the effect of the income variables included in the model. As can be seen, when evaluating the model at the variable means there do appear to be differences in marginal effects over the income range, as hypothesized. The slope is steeper for incomes below $30,000, flattens out for incomes between $30,000 and $70,000, and then gets slightly steeper again for incomes in excess of $70,000.

In a separate analysis, income elasticities were estimated for the total sample and for the classifications of incomes listed above[6]. Income elasticities reveal the effect of a one percent change in income on the percent of education expenditures. Income elasticities were estimated for two reasons: (1) to illustrate the relative magnitude of the impact of income on education expenditures and, (2) to compare results with findings from previous work.

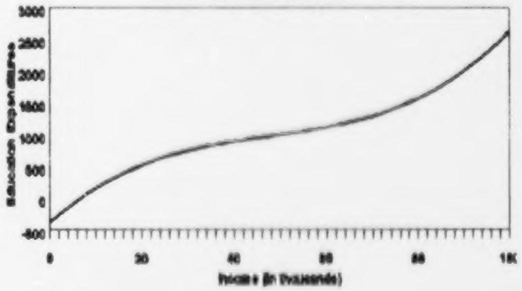
The estimated income elasticities are presented in Table 3. The "pure" income elasticity (i.e., estimated via regression analysis with no other variables except income and education expenditures) for the entire sample is estimated at 3.13. When the additional 21 variables are included in the calculations, the overall elasticity is estimated to be 2.39. This figure is consistent with estimates from previous research (Abdel-Ghany & Foster, 1982). When the sample was split and income elasticities were estimated for each income class, the results are as indicated in Table 3. These estimates are generally consistent with Figure 1, which illustrates the effect of income on education expenditures. The highest income elasticity (4.44) is for households with less than $30,000 income. For households with incomes between $30,000 and $70,000, the elasticity drops to almost a unity state. For household incomes above $70,000, the elasticity rises again to 1.92.

Table 3. Estimated Income Elasticities (N=1849)

Category	**Estimated Income Elasticity**
Total Sample (Income alone)	3.13
Total Sample (All Variables)	2.39
Households < $30,000	4.44
Households $30,000-$70,000	1.02
Households > $70,000	1.92

Figure 1

Education Expenditures and Income



Results from the preference indicator variables regarding the household head suggest that age, gender, occupation, and, to a certain extent, education levels are important factors when explaining household variation of educational expenditures. Race was found not to be statistically significant. Age, gender and occupation are in agreement with the hypothesized direction of influence. On average, age is positively related to education expenditures, with each year of age contributing a $7.20 increase per year. Households with male heads spend significantly less, approximately $258.00/year, on education compared to similar households with a female head. Household heads employed in professional jobs spend, on average, $233.90 more per year than do households in which the head is employed in a non-professional occupation. Households with heads possessing graduate school level education spend significantly more (approximately $552/year) than do heads with less education.

Preference indicator variable results at the household level reveal that number of automobiles, family size, contributions to educational organizations, family type and region were statistically significant (with significant p-values ranging from 0.0001 to 0.0658). Variables that do not seem to explain household education expenditures, *ceteris paribus*, are assets, housing tenure and number of earners in the household. The influence of family size was negative, implying that, for every additional individual in the household, education expenditures are about $81.00 per year lower (on average). The results suggest that there are no significant differences between how single parent families and two-parent families with school-aged children spend their dollars on education, holding all other factors constant. However, families with no children or very young children, and all other family types besides the ones already mentioned spend significantly less than married-couple households with school-aged children. Regional differences in expenditure on educational goods and services exist. Households located in the urban West and urban Midwest spend significantly less than households located in the urban Northeast areas.

Households with access to more automobiles tend to spend more on education than households with fewer number of vehicles. For example, if a household with no car is compared to a similar household with 2 cars, on average, it would be expected that the household with 2 cars would spend approximately $470.00 more per year on education goods and services. Finally, as expected, households which contribute financially to educational organizations tend to spend an average of almost $600 more per year than similar households who do not contribute to such organizations.

Discussion and Conclusions

Of all the variables included in the model, the income variables had the strongest impact in terms of explaining variation in the number of dollars a family spends on education goods and services. The elasticity estimates indicate that household education expenditure is income sensitive; that is, for a one percent change in income, education expenditures would be expected to change by 2.39 percent in the same direction. For households at the lower end of the income scale, this percentage change is doubled (4.44%). These results clearly suggest that if increasing the level of household consumption of education goods and services is desired, social policy efforts should concentrate on increasing family income. This will produce particularly responsive results among families at the lower end of the income scale.

The next set of variables which were found to be important in explaining variation in household education expenditure were the "family" level variables: family type, family size, location of household, number of automobiles and charitable contribution to educational institutions. Results from the family type variables suggest that households with school-aged children spend more on education than other types of families. The number of automobiles played an important role in explaining household education expenditure variation. This begs the question: What exactly is it about automobile ownership that influences, or is associated with, education expenditures? Automobile ownership could represent a means of access to education; however, to clearly examine this issue would require the inclusion of other means of access (e.g., public transportation) as well as barriers to access (e.g., child care, the ratio of persons to cars). Automobile ownership may represent a proxy for "wealth"; however, given that only the number of cars were included in this analysis (and not the age, make, or model of the vehicles), this does not seem as plausible as an explanation. Perhaps automobile ownership is a function of, rather than a proxy for, wealth. In any case, further investigation regarding the nature and meaning of automobile ownership with regard to education expenditure seems warranted given the result from this study.

Family size tends to have a negative effect on household education expenditure. This result may suggest that families allocate dollars to budget areas other than education in response to an increase in the number of household members. In terms of location of the household, the results suggest that the urban West and urban Midwest regions of the country spend less on education than do households located in the urban Northeast. More investigation is required to determine if these differences are due to price differentials, market variations, and/or differences in tastes and preferences. The last family level variable which had a statistically significant result was contribution to educational organizations. The result indicates that when comparing two similar households, differing only by the fact that one household contributes dollars to educational organizations and the other household does not, the household which does contribute also has a significantly higher level of household education expenditure.

The remaining variables, which had an impact less than that of income and the family level variables, are the characteristics describing the head of the household: education level, age, gender, and occupation. Although past research has shown that race has been an important variable in explaining variation in a variety of household expenditure categories, including education, the results of this study did not bear out the same findings. Further investigation, that is, an examination of the different variables used and their connection to race would provide insight into the nature and scope of the preference indicator variables. The results for education suggest that heads with the most education spend the most on household educational goods and services. Those with more education want to buy more education for their families. Households with an older head spend more on education, on average, than households with a relatively younger household head. This result suggests that as the family "ages" the demand for education increases. This result is also supported somewhat by the family type result, which indicates that families with school-aged children spend more on education than other family types. The age variable may also be representing a shift from public (subsidized) education to private or less subsidized education (e.g., the cost for children in public school is relatively less than for children in college).

The results for gender of the household head indicate that, holding all other factors constant, households headed by females spend more, on average, than households headed by males. This may suggest that households headed by females are cognizant of the wage rate inequities in the market place and, in turn, perceive a need to obtain more education (for themselves and also encourage family members to do so) in order to compete for position in the labor market. As well, families in which the head is employed in a professional or managerial occupation spend more on education, on average, than do households in which the head is employed in other types of work. This result may imply that parents working in professional/managerial fields recognize the benefit of education and encourage their children to obtain sufficient levels of education so that the children will be able to maintain the level of living they were accustomed to in their family of origin.

The results from this study reveal that income is by far the most important variable in explaining the absolute amount of dollars a household spends on education goods and services. While expenditure analyses typically find income to be a significant factor, this study found education expenditures to be more sensitive to income changes for those with the lowest levels of income. The findings also suggest that further investigation into automobile ownership, race and household location is warranted.

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Endnotes

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2. This variable was constructed using the summary expenditure files from the CES data set; EDUCAPQ/CQ+READPQ/CQ+COLLEXPX=EDEX.
4. Consumption expenditures were converted into $1,000 units.
5. There were a total of 98 single parent families, with most (87) being female-headed.
6. Income elasticities were calculated with separate double-logarithm equations and using coefficients on income as estimates of elasticity for each category.

Consumer Interests Annual *Volume 42, 1996*

Are Consumers Forward-Looking, Backward-Looking and/or Liquidity Constrained? An International Analysis

Our investigation of the relationship between income and consumption expenditure show that: (*i*) consumers' expenditure and income follow a cointegrated path. (*ii*) Tests of the implication of the random walk model reject this model for all of the OECD countries in the sample but the US and Germany. (*iii*) Estimates of an *ECM* representation support an implication of *liquidity constraints* for most of the countries in the sample.

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Introduction

During the last decade, empirical analyses of the consumption function have centered around two rival models. The first model, that of Hall (1978), is based on the rational expectation hypothesis, which maintains consumers to be *forward-looking*. Hall's model is derived as a stochastic implication of the life cycle-permanent income hypothesis and *requires* consumption to follow a random walk process (*RWH*). The second model, that of Davidson, Hendry, Srba and Yeo (*DHSY*) (1978), maintains that consumers are *backward-looking* and *requires* income and consumption to have an error correction mechanism (*ECM*) model. Mokhtari (1992) presents the *ECM* as an alternative model of U.S. clothing expenditures. Fox (1995) summarizes the relevant econometric methodology underlying the estimation of *ECM* models. It can be shown, however, that if *DHSY*'s model is the true data-generating process, then *RWH* model can be selected incorrectly as the appropriate representation of data (Davidson and Hendry, 1981). This complicates the task of selecting an appropriate model from the two opposing models of consumer behavior.

In this paper, cointegration techniques and Mokhtari's (1994) proposed test are used to provide empirical evidence on the relationship between income and consumption expenditures. Using these techniques, we test for various hypotheses about consumer behavior. We test the maintained assumptions in the *RWH* and the *ECM* models of consumer behavior on a country-by-country basis for 11 OECD countries. Similarly, a test of *liquidity constraints* is conducted.

This paper is organized as follows. First, we provide a description of the theoretical models. Second, we present the time series properties of the data. Third, we test for the maintained assumptions in the *RWH* and *DHSY*. Finally, a test for *liquidity constraints* and our conclusions are presented.

Forward-Looking Behavior

Define permanent income (Y_t^p) as the annuity value of total wealth, where the latter consists of the present discounted value of expected future real labor income (W_t^l) plus non-human wealth (W_t^n), then Y_t^p is:

$$Y_t^p \equiv r(1+r)^{-1}W_t^l + rW_t^n. \tag{1}$$

where, taste is assumed to remain constant over time and consumers have an infinite horizon. The interest rate (r) is also assumed to be constant. This is a reasonable assumption since as Bryant (1990, p.109) notes:

> "Both earlier and later data are consistent with the idea that the substitution effect of changes in interest rates, while consistent with economic theory, is quite small."

Given Y_t^p, maximizing expected utility then implies equality of consumption (C_t) to Y_t^p; *i.e.*,

$$C_t = Y_t^p \equiv r(1+r)^{-1} \left[\Sigma_{i=0}^{\infty} (1+r)^{-i} E_t Y_{t+i}^l\right] + r\left[(1+r)W_{t-1}^n + (Y_{t-1}^l - C_{t-1})\right] \tag{2}$$

where, Y_t^l is labor income and, E_t is the expectation operator, conditional on the set of information held by the consumer at time t, the first bracket [.] is the present discounted value of expected future real labor income (W^l_t), and the second bracket [.] is non-human wealth (W^n_t).

Given that, with the exception of stochastic labor income, other variables are known with certainty at time t, change in C_t depends on the deviation of actual labor income (Y^l_t) from its expected value ($E_{t-1}Y^l_t$):

$$C_t - C_{t-1} = Y^l_t - E_{t-1}Y^l_t = \eta_t \tag{3}$$

where, η_t is a white noise (*innovation*) process in permanent income which contains information not known at time $t-1$. In other words, C_t follows a random walk process (Hall, 1978):

$$C_t = C_{t-1} + \eta_t \tag{4}$$

This requires C_t to be integrated of order one, $I(1)$, (*i.e.*, a nonstationary process), so that ΔC_t is integrated of order zero, $I(0)$, (*i.e.*, a stationary process). Stationarity of ΔC_t is a desirable and testable assumption in many studies of *forward-looking* models of consumption (C_t). But a stronger implication of the *RWH* model is that ΔC_t should not be predictable from the lagged functions of the available information, *e.g.*, Y_{t-1}; failing this test could be caused by the existence of liquidity constraints (Hall, 1978). This also makes C_t to appear too sensitive to Y_t. Appearance of Y_t in the consumption function, coupled with a distributed lag representation for permanent income, yields a fairly general distributed lag model that nests many aspects of *forward-looking* behavior among consumers.

The *RWH* model is consistent with the idea that C_t and Y_t follow a cointegrated path; hence, they have an *ECM* as their statistical representation. Campbell (1987) shows that intertemporal optimization implies that saving ($=Y_t-C_t$) equals the negative of the sum of the present value of expected *changes* in labor income series, i.e.:

$$Y_t - C_t = -\Sigma^{\infty}_{i=0} (1+r)^{-i} E_t \Delta Y^l_{t+i}$$

If $Y^l_t \sim I(1)$, then $\Sigma^{\infty}_{i=0} (1+r)^{-i} E_t \Delta Y^l_{t+i}$ is $I(0)$, and therefore, $(Y_t - C_t) \sim I(0)$, given $C_t \sim I(1)$. In effect, C_t and Y_t, each following a random walk process, can form a linear combination that is (cointegrated) stationary. Additionally, since Granger's representation theorem (Engle and Granger, 1987), proves that cointegrated variables have an error correction representation, an *ECM* model of C_t and Y_t is also consistent with the *RWH* model and its underlying assumption that consumers are *forward-looking*. Similarly, if Y_t is decomposed into a random walk component Y^p_t and a stationary component (the transitory income, Y^T_t), then $C_t = Y^p_t$ implies $C_t - Y_t = Y^T_t$ which is a stationary process by assumption; i.e. C_t and Y_t are cointegrated with [1, -1] as cointegrating vector.

Backward-Looking Behavior

Direct application of Philips's (1954) *feedback* control rules (borrowed from control engineers) to the consumption process yields *DHSY*'s version of the *ECM* model of consumption. *DHSY*, in effect, present *ECM* as the *structural* model of C_t. This is obtained when ΔY_t and $(Y_{t-1} - C_{t-1})$ are used to explain short-run changes in C_t:

$$\Delta C_t = \beta_1 \Delta Y_t + \beta_2 (Y_{t-1} - C_{t-1}) \tag{5}$$

where β_1 and β_2 are interpreted as the parameters of *derivative* (ΔY_t) and *proportional* ($Y_{t-1} - C_{t-1}$) control mechanisms, respectively. This *structural* interpretation of the *ECM* model assumes a limited degree of rationality and sophistication for consumers (Davidson and Hendry, 1981).

Popularity of the *ECM* representation as a natural route for data base modeling derives from the fact that autoregressive distributed lag specifications that are fairly general can be rearranged to yield an *ECM* look-alike formulation. For example, rearranging:

$$C_t = \gamma_1 Y_t + \gamma_2 Y_{t-1} + \gamma_3 C_{t-1} + \nu_t \tag{6}$$

where $\nu_t \sim NI(0, \sigma_\nu)$ and γs are constant parameters, yields:

$$\Delta C_t = \gamma_1 \Delta Y_t - \alpha (C_{t-1} - \psi Y_{t-1}) + \nu_t \tag{7}$$

where, $\alpha = (1-\gamma_3)$ and $\psi = (\gamma_2 + \gamma_1)/\alpha$. In contrast with (5), where $\psi = 1$, (7) imposes no restriction on the long-run response of C_t to Y_t, so that ψ can be estimated from the data. Engle and Granger argue that if C_t and Y_t are $I(1)$, then a significant α implies that C_t and Y_t are cointegrated with $[1, -\psi]$ as the cointegrating vector. Note that, generalization of (7) to higher order autoregressive distributed lag models is a straightforward procedure.

Another important feature of the *ECM* model is that changes in consumption ΔC_t are influenced by past disequilibrium or mistakes ($C_{t-1} - \psi Y_{t-1}$); hence, *backward-looking* behavior is assumed. Moreover, the data generating process of Y_t is assumed to have no bearing on the parameters of (7). This is the *weak exogeneity* assumption, which is nested in the *DHSY* model. Following Johansen (1992), consider an *n*-dimensional VAR process Z_t with each component assumed to be $I(1)$:

$$Z_t = \mu + \Sigma_1^k \Pi_i Z_{t-i} + \zeta_t$$

where, ζ_t follows a normal innovation process with covariance matrix Ω, Π_i are $n \times n$ parameter matrices, μ is an *n*-vector parameter and $t=1,\ldots,T$. For $Z_t\,[=(C_t, Y_t)]$, Ω may be partitioned to Ω_{cc} and Ω_{yy} as the diagonal and Ω_{yc} and Ω_{cy} as the off-diagonal elements. Rewriting the above model in a reduced form *ECM* model yields, $\Delta Z_t = \mu + \alpha\beta' Z_{t-1} + \Sigma_1^{k-1}\Gamma_i \Delta Z_{t-i} + \zeta_t$ where, $\alpha\beta' = \Sigma_1^k \Pi_i - I$, $\Gamma_i = -\Sigma_1^k \Pi_j$, and α and β are $n \times r$ matrices of full column rank with $n>r>0$. Here, r is the cointegrating rank of Z_t, β is the cointegrating matrix and α is the weight of β, also, known as the matrix of the loading factor. Since this setup implies that components of Z_t are cointegrated, by decomposing Z_t to, C_t and Y_t, and letting $\omega=\Omega_{cy}\Omega^{1}_{yy}$, ΔZ_t can be written as a system of equations:

$$\Delta C_t = \underline{\mu} + \omega \Delta Y_t + \underline{\alpha}\beta' Z_{t-1} + \Sigma_1^{k-1}\underline{\Gamma}\Delta Z_{t-i} + \underline{\zeta}_t$$

and

$$\Delta Y_t = \mu_y + \alpha_y \beta' Z_{t-1} + \Sigma_1^{k-1}\Gamma_{yi}\Delta Z_{t-i} + \zeta_{yt}$$

where, $\underline{\mu}=\mu_c - \omega\mu_y$, $\underline{\alpha}=\alpha_c - \omega\alpha_y$, $\underline{\Gamma}=\Gamma_{ci} - \omega\Gamma_{yi}$ and $\underline{\zeta}_t=\zeta_{ct} - \omega\zeta_{yt}$. These equations are the conditional model for C_t given Y_t and the marginal model for Y_t, respectively. When β is the parameters of interest, $\alpha_y=0$ implies *weak exogeneity* of Y_t for β. This is because $\alpha_y=0$ allows the partial model ΔC_t to include all the relevant information for estimation and inference about the cointegrating vector β. In particular, $\alpha_y=0$ makes the adjustment coefficient of Z_{t-1} free of the covariance matrix of the errors ω. Hence, if the inclusion of "disequilibrium error" in the VAR model of Y_t yields an insignificant parameter for this variable then Y_t is *weakly exogenous* for β as suggested by Johansen.

The above setup is contrary to the *forward-looking* nature of the *RWH* model of C_t that imposes the rational expectations assumption, hence, it takes the data generating process of Y_t into account. Davidson and Hendry (1981) argue that if the *DHSY* model is the true data generating process then a simpler model such as the *RWH* model may be wrongly selected as the appropriate representation of data. However, as it is noted above, the *ECM* representation is consistent with both hypotheses. Nevertheless, if an *ECM* representation is the data generating process for C_t and, implications of (4) or (7) are rejected by the data, then one can distinguish between these two models.

Liquidity Constraint

The model in (5), can also be derived by invoking a variety of adjustment costs (Nickell, 1985, Mokhtari, 1992). For instance, the *ECM* model can be derived by minimizing a fairly general quadratic cost function based on adjusting the actual consumption, C_t to its desirable value, C^*:

$$L_t = \lambda_1 (C_t - C^*_t)^2 + \lambda_2 (C_t - C_{t-1})^2 - 2\lambda_3 (C_t - C_{t-1})(C^*_t - C^*_{t-1}),$$

where adjustment factors λ_1, λ_2 and $\lambda_3 \geq 0$, and $(C_t - C_{t-1})(C^*_t - C^*_{t-1})$ reflect the attenuation of cost if C_t moves toward C^*_t. It is important to note that, for derivation of the *ECM* model in this context, researchers invariably use *symmetric* cost functions and assume a monotonic path for the convergence of C_t to C^*_t, in either case of $C_t>C^*_t$ or $C_t<C^*_t$. This ignores the presence of *liquidity constraints*. Clearly, if consumers have limited borrowing opportunities then adjustment to C^*_t is more feasible when C_t converges to C^*_t from above $(C_t>C^*_t)$ than below $(C_t<C^*_t)$. Hence, significance of an appropriate function of adjustment factors (λ_1, λ_2 and λ_3) for situations where $C_t>C^*_t$ in conjunction with insignificance for $C_t<C^*_t$, could have been caused by the existence of persistent liquidity constraints in the economy and not necessarily because consumers are naturally *backward-looking* in their decision making process.

Time Series Behavior of the Data

Summers and Heston's (1988) real per capita annual data for 11 OECD countries over the period 1950-1982 provide the basic data for this analysis. This work provides estimates of price parities and overall purchasing power parities required for the proper conversion of the various expenditures of countries to an internationally comparable data set (see, Mokhtari, 1990).

This study is limited in two respects. First, only aggregate data on real per capita private consumption expenditures, real per capita disposable income, and prices are used. This is mainly due to the paucity and required comparability of the data across different countries. One can also observe the same problem, *i.e.*, paucity of data, even when U.S. data is used for the analysis of consumer problems (Bryant and Wang, 1990, p.288). Second, given the length of the time series available, at most, a second order autoregressive distributed lag specification can be considered.

To test the null hypothesis of unit roots in c_t and y_t (the *log* of expenditures and the *log* of income) and their first differences (Δc_t and Δy_t), values of the Sargan and Bhargava statistic (CRDW), the Dickey and Fuller statistic (DF) and the augmented Dickey-Fuller statistic (ADF) were computed. The Sargan and Bhargava (1983) Durbin-Watson statistic (CRDW) allows for testing that a variable, x_t, is generated by the Gaussian random walk process against the alternative hypothesis of the stationary first order Markov process. Sargan and Bhargava also provide tables for critical values and show their CRDW statistic to be Uniformly Most Powerful invariant against the first order stationary Markov process. At the 5% level of significance, the critical value for CRDW is .77, as the upper and lower limits are the same in this regard. To test the null hypothesis of a unit root by the ADF statistic, the regression

$$\Delta x_t = \phi_0 + \phi_1 x_{t-1} + \phi_2 \Delta x_{t-1} + \zeta_t \qquad \zeta_t \sim IN(0, \sigma^2_\zeta)$$

is run, and the significant value for a negative ϕ_1 is taken to reject the presence of a unit root in x_t. For the DF-test the same regression is run while restricting $\phi_2=0$. Critical values, at the 5% and 10% levels of significance, for the DF and the ADF are -3 and -2.6, respectively. As one may expect, no significant values of CRDW, DF and ADF for c_t and y_t were found. However, significant values of these statistics for the first difference of these variables showed that Δc_t and Δy_t are $I(0)$. One implication of the information in this table is that c_t and y_t are nonstationary $I(1)$. The overall finding is that $\Delta c_t \sim I(0)$ satisfies a minimum condition required by the *RWH* model; however, this is also consistent with the feedback interpretation.

To test for cointegration among the above variables, separate *OLS* estimates of:

$$c_t = a_0 + a_1 y_t + e_t \tag{8}$$

where, e_t is the usual disturbances, are obtained. For (8), rejecting the null of a unit root in any of the disturbances implies the existence of a linear combination that produces stationary disturbances. Stock (1987) proves that *OLS* estimates obtained by performing a cointegrated regression converge to their true values at a faster rate than otherwise. For example, if e_t is $I(0)$, then c_t and y_t are cointegrated, in which case, the *OLS* estimate of a_1 will be a consistent estimate of the income elasticity of consumption. In particular, coefficient estimates from cointegrated regressions have a bias of order $O_p(T^{-1})$ rather than order of $O_p(T^{-1/2})$. Hence, the estimates are super-consistent. This provides the basis for Engle and Granger's two-step modeling method that allows the long-run elasticities to be estimated by a static regression (8). The *DHSY* model restricts a_1 to unity (the proportionality hypothesis) and suggests a test that involves inference using a t-test on an integrated variable (y_{t-1}). Phillips and Durlauf (1986), *inter alia*, show that t-tests of the parameters of nonstationary variables do not have the usual standard distribution. Our estimates of (8), not reported here, yield mixed results on rejecting the hypothesis of a unit root at the 5% level of significance for (8). The DF value support cointegration of c_t and y_t for U.S., Austria, Belgium and the U.K. On the other hand, the ADF values show a significant value only for the UK. The CRDW values are also too low and come close to attaining the lower bound for this statistic only for Austria and the UK.

For cointegrated variables an *ECM representation* exist. Hence, finding a significant error correction term is vital to both the *forward-looking* and *backward-looking* models.

Potential bias in the estimates of cointegration vectors from the static regressions, and the low power of univariate test methods (e.g., DF, ADF and CRDW) have led Banerjee, Dolado, Hendry and Smith (1986) to recommend estimation of a dynamic multivariate model as the starting point for modeling and testing. In particular, they use an *ECM* representation and show its advantages over univariate methods. Banerjee *et al.* suggest the t-test of the error correction term as a more powerful statistic for testing the null of unit root. Both an estimate of a_1 and a valid *ECM* representation are important for testing the implications of *forward-looking* and *backward-looking* models. An *ECM* representation corresponding to (8) is:

$$\Delta c_t = b_0 + b_1 \Delta y_t + b_2 e_{t-1} + \epsilon_t \tag{9}$$

where, ϵ_t are the disturbances. In (9), $e_{t-1} = c_{t-1} - a_0 - a_1 y_{t-1}$, is used as the error correction term. This substitution restricts the cointegrated regression parameters to the ones that can be obtained by estimating the static model, (8). Alternatively, replacing e_{t-1} in (9) by c_{t-1} and y_{t-1} yields the unrestricted versions of (9). Hence, inclusion of e_{t-1} as the error correction term is a testable restriction, where the usual F-statistic can be applied. In practice, *OLS* estimates of e_{t-1}, denoted by $\hat{e}_{t-1}$, are used as the error correction term. At the 5% level of significance,

Table I

Testing the Implications of *RWH* AND *DHSY* Models

COUNTRY	$\mathbf{t}_{RWH}$	$\mathbf{t}_{DHSY}$	$F_{DHSY}(1, 31)$	HAUSMAN	$\mathbf{t}_{b21}$	$\mathbf{t}_{b22}$
U.S.A.	0.59	0.79	1.10	26.05	-1.62	0.13
Japan	2.93	0.48	3.09	41.81	-2.06	-1.62
Austria	2.28	0.53	6.28	16.03	-3.61	-0.51
Belgium	3.58	1.97	1.70	8.07	-1.24	-2.21
Denmark	2.07	0.56	4.49	44.29	-1.00	-1.55
France	3.38	0.73	3.43	27.52	-1.93	-1.10
Germany	1.63	0.83	6.96	137.91	-4.10	-0.72
Italy	2.65	0.55	4.46	1.33	-1.09	-1.90
Netherlands	4.78	0.48	9.78	110.39	-2.55	-0.71
Spain	3.46	2.16	3.66	0.30	-1.93	0.32
U.K.	2.38	0.78	1.88	437.42	-2.20	-0.66

$\mathbf{t}_{RWH}$: is a t-test of d_2=0, obtained by running: $c_t = d_0 + d_1 c_{t-1} + d_2 y_{t-1} + u_t$.

$\mathbf{t}_{DHSY}$: is a t-test of h_2=0, obtained by running: $\Delta y_t = h_0 + h_1 \Delta c_{t-1} + h_2 w_{t-1} + v_t$, where, w_{t-1} was replaced by its estimate,
$\hat{w}_{t-1} = y_{t-1} - \bar{k}_0 - \bar{k}_1 c_{t-1}$.

$F_{DHSY}(1, 31)$: is an F-test of the nested restriction in w_{t-1}, whereas the unrestricted model, w_{t-1} was replaced by c_{t-1} and y_{t-1}.
HAUSMAN: is Hausman's (1978) test for exogeneity of Δy_t in (10). HAUSMAN $\sim \chi^2$ with one degree of freedom under the
null of independence of Δy_t from disturbances.

$\mathbf{t}_{b21}$ and $\mathbf{t}_{b22}$: are t-tests of b_{21}=0 and b_{22}=0, respectively. These are obtained by running:

$$\Delta c_t = b_0 + b_1 \Delta y_t + b_{21} e^{*}_{t-1} + b_{22} \bar{e}_{t-1} + \epsilon_t$$

application of a battery of diagnostic tests shows (9) to be a good representation of the data for the 11 OECD countries.

Monte Carlo findings in Banerjee *et al.* show that the t-test of the error correction term has its correct size at the 5% level of significance and suggest that this test is more powerful than the CRDW statistic. We also found that t-ratios for the coefficients of $\hat{e}_{t-1}$ support the cointegration of c_t and y_t for all countries. To check the validity of these t-ratios, a series of bootstrap experiments (100 repetitions per country) were conducted. The median of the bootstrap t-values (denoted by BOOT in Table I) are very close to the t-values on $\hat{e}_{t-1}$ and support cointegration of c_t and y_t. As a further check on the error correction term, an F-test of the imposed parameter restrictions in e_{t-1} (= $c_{t-1} - a_0 - a_1 y_{t-1}$) was conducted. As the unrestricted model, estimates of (9) with the c_{t-1} and y_{t-1} replacing $\hat{e}_{t-1}$:

$$\Delta c_t = b_0 + b_1 \Delta y_t + b_4 c_{t-1} + b_5 y_{t-1} + \epsilon_t \quad (9a)$$

were used. Note that, the constant b_0 now also includes a_0. The results of the F-test in Table I, $F_1(1, 28)$, at the 5% level, reject the null only for Japan and Belgium. This evidence supports the claim that a simple *ECM* (9) is a fairly good representation of the data generating process for consumption. However, whether this model reflects *forward-looking* or *backward-looking* behavior and/or behavior under *liquidity constraints* is of interest.

RWH, ECM and Liquidity Constrained

The random walk hypothesis of consumption implies that lagged income should not play a significant role in explaining the variation in current consumption. In particular, the coefficient of lagged income, d_2, in the following regression

$$c_t = d_0 + d_1 c_{t-1} + d_2 y_{t-1} + u_t \quad (10)$$

where, u_t is the disturbances, should be insignificant.

Table I contains the results of t-tests of d_2=0, denoted by $\mathbf{t}_{RWH}$, based on the estimates of (10). Country-by-country t-values overwhelmingly reject the

RWH model, except for the US and Germany. For the US, the findings are similar to Hall's (1978) primary results. As an alternative to the *RWH*, Hendry and his associates strongly argue for a *backward-looking* explanation of consumer behavior. Indeed, our cross-country evidence against the *RWH* model, offers support to their argument. However, this ignores the fact that imperfections in the capital market (liquidity constraints) and not *backward-looking* behavior may have caused rejection of Hall's *forward-looking* model. Hence, to accept *backward-looking* behavior as a viable explanation of the movement in consumers' expenditure, implications of liquidity constraints, that may have led to the above results, should be tested.

The *DHSY* model assumes that the density, D(.), for the data, say, X_t [=(c_t, y_t)], and their lagged values, say, I_{t-1} [=(c_{t-1}, y_{t-1})], can be factorized to yield $D(c_t|y_t, I_{t-1}, \theta_1)\, D(y_t|I_{t-1}, \theta_2)$ where θ_1 and θ_2 are vectors of constant parameters. Maintaining this assumption allows one to regress (condition) c_t on y_t and I_{t-1} and, hence, to proceed to estimate and conduct inferences about θ_1 without modeling y_t and estimating its parameters θ_2. In this case, y_t is said to be *weakly exogenous* for θ_2. In other words, y_t is *sufficient information* for estimation and inference about the parameters of the conditional model.

To test for the weak exogeneity of y_t in the *DHSY* model, an *ECM* representation consistent with the marginal model $D(y_t|I_{t-1}, \theta_2)$ that uses only lagged information is constructed. After running:

$$y_t = k_0 + k_1 c_t + w_t$$

where, *k*s are parameters and w_t is the disturbance term, lagged estimates of w_{t-1} were used in the following *ECM* representation:

$$\Delta y_t = h_0 + h_1 \Delta c_{t-1} + h_2 w_{t-1} + v_t$$

where, *h*s are the parameters and v_t is the disturbance term. Significant t-ratios of h_2, denoted by t_{DHSY} in Table I, reject the assumed restriction (h_2=0) for Belgium and Spain. Testing the nested restriction in w_{t-1}=(y_{t-1} - k_0 - k_1 c_{t-1}) by replacing w_{t-1} with y_{t-1} and c_{t-1} and preforming an F-test provides a less favorable result for the *weak exogeneity* of income. Significant values of this F-test, denoted by $F_{DHSY}(1, 31)$ in Table I, support the *weak exogeneity* assumption only for Austria, Denmark, Germany, Italy and Netherlands. Further evidence against exogeneity of income is obtained by an application of the Hausman (1978) test to (9), where, in addition to the relevant explanatory variables in (9), Δy_{t-1}, Δc_{t-1}, and $\Delta^2 p_t$ are also used as instruments. Reported values for the Hausman's (1978) test for exogeneity, denoted by HAUSMAN in Table I, which are distributed as χ^2 with 1 degree of freedom under the null, clearly reject exogeneity of Δy_t for all but two countries of Italy and Spain. The above tests strongly reject exogeneity of y_t, requiring a system, rather than a single equation approach, to the modeling methodology that *DHSY* advocates. However, since the purpose of this paper is not to generate a new model but to test the existing ones, no attempt to formulate a system for c_t and y_t is taken.

If consumers are *backward-looking*, then their response (b_2) to past mistakes (e_{t-1}) should be stable and consistent with this hypothesis. On the other hand, if consumers are *forward-looking* but have limited opportunity to borrow, then this would account for the rejection of irrelevance of lagged information in the *RWH* model. Hence, a proper differential response of consumers to the positive and negative values of e_{t-1} can serve two purposes: rejecting the *backward-looking* explanation, on the one hand, and favoring the *forward-looking* explanation on the other hand.

Proponents of the *backward-looking* explanation rely exclusively on the tests for parameter invariance over time. Such tests ignore the important fact that economic agents react to economic constraints that are not necessarily time-dependent. Since limited borrowing opportunities for consumers might be spaced randomly over time, rejecting time-dependent structural breaks provides no useful information to support the *backward-looking* explanation. However, parameter constancy is required for (conditional) models that support the effectiveness of government policies. For a proper test of *liquidity constraints* one should allow for differential reaction of consumers to positive and negative deviations from the optimal path of consumption (Mokhtari, 1994). In particular, if borrowing opportunities are limited, then adjustment to the optimal level of consumption is more feasible when actual consumption exceeds optimal consumption than otherwise. Indeed, if actual consumption is less than optimal, severely limited borrowing opportunities may not permit significant adjustment to the optimal level to occur.

Since cointegrated regressions capture the equilibrium state of consumption-income relationship, implications of *liquidity constraints* can be tested by consumers response (b_2) to the deviations from the equilibrium or (optimal) path, i.e., e_{t-1} (= c_{t-1} - a_0 - a_1 y_{t-1}). If actual consumer expenditure (c_{t-1}) is higher than optimal level (a_0 - a_1 y_{t-1}), or e_{t-1}>0, then consumers lower this gap by decreasing Δc_t, so consumer response to this gap, denoted by b_{21} should be negative and significant. On the other hand, if $c_{t-1} < a_0 - a_1 y_{t-1}$, or $e_{t-1}<0$, then severely limited borrowing opportunities for consumers may not allow any significant increase in Δc_t, so that consumer response, denoted by b_{22} will be insignificant. Since an insignificant b_2 also results, if no deviation from the optimal path ($e_{t-1}=0$) is encountered, such cases are included with the liquidity constraint situations; that is b_{22} is the slope coefficient for $e_{t-1} \leq 0$.

The proposed testing procedure of Mokhtari (1994), consistent with the above implications, (9) can be rewritten as:

$$\Delta c_t = b_0 + b_1 \Delta y_t + b_{21} e^{+}_{t-1} + b_{22} e^{-}_{-1} + \epsilon_t$$

where, for estimation, e^{+}_{t-1} consists of a column of positive values of $\hat{e}_{t-1}$ and zero, otherwise. Similarly, e^{-}_{-1} consists of negative (or zero) values of $\hat{e}_{t-1}$ and zero, otherwise. If *liquidity constraints* matter, then b_{21} will be negative and significant. Moreover, insignificance of b_{22}, in addition to providing support for the *liquidity constraints* proposition, is evidence against a *symmetric* reaction to disequilibrium terms, invariably assumed by the proponents of the *backward-looking* hypothesis.

Negative and significant t-ratios of $\hat{b}_{21}$ (denoted by t_{b21} in Table I), at the 5% level of significance, support the first half of the above proposition about *liquidity constraints* for Japan, Austria, Germany, the Netherlands and the UK. At the 10% level, France and Spain also support this proposition. Similarly, insignificant t-ratios of $\hat{b}_{22}$ (denoted by t_{22} in Table I), for all countries, but for Belgium and Italy, strongly support the second half of the *liquidity constraint* proposition.

These results high light a possible deficiency in testing for random walk behavior in consumers' expenditure, as a *forward-looking* model is rejected in favor of a *backward-looking* one generally designed to pass a battery of diagnostics. The presence of *liquidity constraints* accounts for the appearance of contemporaneous income in the consumption function. This raises the issue of joint determination of consumption and income and, in particular, exogeneity of income for the parameter of interest.

Conclusion

Our investigation of the relationship between income and consumption expenditure shows that (*i*) consumers' expenditure and income are nonstationary (integrated) of the first order, but follow a cointegrated path. (*ii*) tests of the implications of the random walk model, that assumes *forward-looking* behavior, reject this model for all of the OECD countries in the sample but the US and Germany. (*iii*) estimates of an *ECM* model support an implication of *liquidity constraints* for most of the countries in the sample.

Acknowledgements

The authors thank W. Keith Bryant and three anonymous referees for their helpful comments on an earlier draft of this paper.

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Consumer Interests Annual *Volume 42, 1996*

An Approach to Adding Price Information To the Consumer Expenditure Survey

This paper describes an approach to adding price information to the Consumer Expenditure Survey by using the Consumer Price Index and the ACCRA Cost of Living Index. Creating such a data set enables us to further explore many research topics of demand analysis at household level. Strengths and weaknesses of this approach are also discussed.

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In neoclassical consumer theory, consumer behavior is frequently presented in terms of preferences and possibilities. On the preference side, we usually consider a consumer faced with possible consumption bundles in his or her consumption set. The consumer also is assumed to have preferences on some consumption bundles over others. On the other side, choices are limited within the consumer's available resources. Two important factors determine a consumer's budget constraint: permanent income and market prices he or she faces. Given a budget constraint and a utility function representing consumer preferences, a consumer purchases the bundle of commodities that maximizes his or her utility.

Modern expenditure and demand analyses usually are based on this neoclassical framework. Topics of research interest include income elasticities, own-price and cross-price elasticities, and the effects of demographic variables on consumers' demand or consumption expenditure. While income elasticities and demographic effects are usually estimated using both macro-level and micro-level data, price elasticities are mostly estimated only using macro level data. Since prices don't change a lot over a short period of time, Engel studies using cross-sectional household level data usually assume constant prices.

One shortcoming of estimating price elasticities using only macro-level time-series data is that we are unable to look at different responses to price changes by consumers in different regions, with different household structures, different levels of income, and different ethnicity, while many marketing research and government policy research questions can be better answered using this information. Examples of research issues include identifying market segments, evaluating changes in tobacco taxes, gasoline taxes and their welfare impact on poor and old households, and analyzing government welfare policies such as the food stamp program.

In order to conduct complete demand analysis using micro-level data, one approach to use is to incorporate price information into the Consumer Expenditure Survey. The main purpose of this paper is to describe how to use two other data sets: the Consumer Price Index and the ACCRA Cost of Living Index, to add price information to the Consumer Expenditure Survey. Strengths and weaknesses of this approach are also discussed.

About the Three Data Sets

The three major data sources used in this study are the 1980-1990 Consumer Expenditure Survey (CES), the 1980-1990 Consumer Price Index (CPI) -- both collected by the Bureau of Labor Statistics (BLS) -- and the 1990 ACCRA Cost of Living Index (ACCRA), published by the American Chamber of Commerce Researchers Association. The CES data set, collected continuously and annually since 1980 by BLS, provides very detailed information on household expenditures and household demographic characteristics. The price data, coming from the CPI and published by BLS every year since 1913, are compatible and consistent with the CES, since the CPI data use expenditure weights obtained from the CES data. While the CPI provides price data over time, the ACCRA data publish price differences for many areas for major expenditure categories. These areas include cities and standard metropolitan statistical areas (SMSA's). Therefore, the ACCRA data are used as a supplement to the CPI price data in this study. The sample period in this study is annually from 1980 to 1990.

The Consumer Expenditure Survey

The Consumer Expenditure Survey (CES) data consist of two separate samples: the diary survey and the interview survey. The interview survey is used for this study. In the interview survey, each of the sample consumer units reports information to an interviewer every three months for five consecutive quarters. The data are collected from nationwide probability samples representing the total civilian, noninstitutional population of the United States, with the use of a rotating procedure for improving data collection efficiency. Each quarter, 20 percent of the sample are new households introduced for the first time. They replace one-fifth of the sample that has completed its final interview in the previous quarter.

The interview survey collects detailed data on an estimated 60 to 70 percent of total family expenditures. In addition, estimated average expenditures for each quarter are obtained for food and other selected items and these global estimates account for an additional 20 to 25 percent of total expenditures (BLS Handbook of Methods, Bulletin 2285). So the detailed expenditures covered by the interview survey account for about 80 to 95 percent of a household's total expenditure, where expenditure refers to transactional cost, including excise and sales tax on goods and services acquired during the interview period.

For this study, only households that completed the interview for an entire calendar year are selected. Furthermore, since the CPI does not provide price index information for households residing in rural areas, rural households are excluded.

The Consumer Price Index

The Consumer Price Index (CPI) is a measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. It is calculated monthly for two population groups, one consisting only of wage earners and clerical workers (CPI-W) and the other consisting of all urban households (CPI-U). The CPI-U represents the prices paid by about 80 percent of the United States population and is used in this study. The CPI is estimated from a set of samples which are designed using statistical procedures to make the CPI representative of the prices paid for goods and services purchased by consumers in urban areas of the United States. Since 1988, the index is calculated from data collected in 88 urban area Primary Sampling Units (decreased from 94 due to budgetary reasons), selected based on criteria that including region, population size, percentage of population increase from 1960 to 1970, and major industry (BLS Handbook of Methods, Bulletin 2414). The market basket of items that is priced in the CPI is selected in two phases. In the first phase, item categories are selected at Entry Level Item (ELI) level, a relatively broadly defined grouping of items. The probability of selection of an ELI is proportional to the expenditure reported for that ELI in the CES. In the second phase, specific item selection is made from within the designed ELI categories using multistage probability sampling procedures (U.S. Bureau of Labor Statistics, 1913-1990 CPI on-tape documentation).

National indices are available for about 350 consumer items and item groups with some of them beginning in 1913. Area indices are available for 27 places and for about 65 items and groups. Regional indices are available for 4 regions with about 95 items and groups per region. City-size indices are available for 4 city-size classes with about 95 items and groups per class. Fourteen region/city-size indices are available, cross-classified by region and city class. For each of the 14 cross classifications, about 60 items and groups are available.

The CPI is a fixed-quantity price index. That is, it is a ratio of the costs of purchasing a set of items of constant quality and constant quantity in two different time periods. Denoting the index by $I_{t,0}$, where t is the comparison period for which a new index number is to be computed and 0, the reference period, then $I_{t,0}$ is calculated by using:

$$I_{t,0} = \frac{\sum_i P_{it}Q_{ib}}{\sum_i P_{i0}Q_{ib}} \times 100, \qquad (1)$$

where P_{it} is the price of the i^{th} item in comparison period t, P_{i0} is the price for the i^{th} item in reference period 0, and Q_{ib} is the quantity of the i^{th} item consumed in the expenditure base period b. For most of the price indices currently published, 1982-1984 is used as the base year. Since most of the indices are published monthly since 1977, annual average indices can be constructed using 12 successive months of the CPI values by:

$$I_{year} = \frac{\sum_{i=1}^{12} I_{i,0}}{12}, \qquad (2)$$

where the value of each monthly index is real or imputed and provided in the CPI data tape (BLS Handbook of Methods, U.S. Bureau of Labor Statistics Bulletin, No. 2414).

The ACCRA Cost of Living Index

Although the CPI provides useful and detailed information on price changes for different expenditure categories over time, it has its limitations. In particular, the CPI does not provide data on relative living costs among different geographical areas. It has been commonly known that prices for some expenditure categories such as housing, are very different from area to area, and the assumption that the prices are the same among geographical areas at any given time is obviously unrealistic and can cause errors in statistical analyses.

The ACCRA Cost of Living Index (ACCRA) is quarterly data collected and published by the American Chamber of Commerce Researchers Association. It provides a useful and reasonably accurate measure of living cost differences among urban areas in the United States. Items on which the index is based have been carefully chosen to reflect the different categories of consumer expenditure. Weights assigned to relative costs are based on the CES survey data on expenditure patterns for midmanagement households. The data cover most of the Metropolitan Statistical Areas (MSAs) and Primary Metropolitan Statistical Areas (PMSAs), which were defined by the Office of Management and Budget in 1983, and are thus compatible with the CPI area sample construction.

The ACCRA data consist of two sections of quarterly data: an urban area index and an average price index. In the urban area index data, each place's composite index and six component indices - grocery items, housing, utilities, transportation, health care, and miscellaneous goods and services, are reported. These places are MSAs, PMSAs, and selected nonmetropolitan areas. The average price reported for each item in the survey is shown for each participating place (American Chamber of Commerce, 1990). The urban area index is used in this study.

Data Construction

While data on expenditure and socio-demographic characteristics are drawn from the Consumer Expenditure Survey, data on prices are constructed for 14 region/city-size cross-classifications and 4 regions each year using both the Consumer Price Index and the ACCRA Cost of Living Index. These two parts are then matched using the region/city-size information provided in the CES so that households in the sample has data on prices in the region they live and the specific city size range their PSUs belong to.

The number of expenditure categories included in the study is determined by taking data availability and computational feasibility into consideration. After careful examination of the data available in these three data sources, 13 mutually exclusive summary expenditure categories are selected. They are: (1) Food at home; (2) Food away from home; (3) Shelter; (4) Fuel and utilities; (5) Household operation, household equipment and furnishing; (6) Apparel and upkeep; (7) Entertainment; (8) Transportation; (9) Education; (10) Health care; (11) Alcoholic beverages; (12) Tobacco; and (13) Personal care. For detailed information about the commodities and services included in each category, refer to the 1990 Consumer Expenditure Survey EXPN file on-tape documentation.

Step 1. Constructing a consistent CES data set from 1980 to 1990

Since 1984, BLS has provided summary expenditure data for about 20 categories on public-use data tapes, and expenditures on these 13 expenditure categories of interest are calculated using the summary expenditure information. For the four years from 1980 to 1983, expenditure information is only given at Universal Classification Category (UCC) level, so data on these 13 summary expenditure categories are calculated from detailed UCC expenditures, following the definitions of expenditure categories defined in 1990. During these 11 years, there have been several changes in the definitions of expenditure categories. Major changes affecting construction of the expenditure categories of interest are: (1) Before 1987, "food prepared by consumer units on trips" (U.C. 190904) was classified as "food away from home," whereas starting from 1987, it is classified as "food at home"; (2) Before 1987, "smoking alarm purchase and rental (U.C. 690241-690245)" was in the expenditure category "shelter." It is classified as "household equipment and furnishing" starting from 1987; (3) Before 1987, "docking and landing fees (U.C. 520901), trailer rental. including mileage charge (U.C. 520904), boat and trailer rental on out-of-town trips (U.C. 520907), rental of campers and other vehicles on trips (U.C. 620902), rental of boats (U.C. 620906), and rental of campers and other recreational vehicles (UCC 620907)" were classified as "entertainment", whereas after 1987, they are included in "transportation"; and (4) Beginning in 1988, "materials for dwellings under construction and additions by renters (UCC 990950)" has been eliminated from expenditure estimation. The expenditure category "shelter" before 1988 was affected.

To construct a consistent data set, all the expenditure categories of interest are constructed or modified following the category definitions defined in 1990.

Step 2. Constructing region/city-size price indices for 1990

The construction of price data is more complicated, since the CPI and the ACCRA data are collected by different agents and the sampling technique, expenditure category classification might not have been consistent with each other. Fortunately, the similarities are more than the differences. The major bridge between these two data sets is the area sampling units, which are MSAs and PMSAs (1088 in total) defined by the Office of Management and Budget in 1983. For the CPI, 88 out of these 1088 MSAs and PMSAs are selected to form the sample of areas. Detailed sample areas, population weights, and pricing cycle information are provided in "BLS Handbook of Methods" (U.S. Bureau of Labor Statistics Bulletin, No. 2414). In 1990, the ACCRA data reported price differences for about 86% of the CPI sampling areas (76 out of 88), and covered about 90% of the population used in the CPI. Using the CPI area sample information, a subsample is drawn from the ACCRA data with 76 sampling areas that are also in the CPI area sample. The use of these population weights are modified using the CPI population weights information so that the region/city-size subsamples weight up to the total population of their specific region/city-size groups, and the whole sample weights up to the whole population defined by the CPI.

Price indices for 14 region/city-size classifications are constructed and price indices also are aggregated for four regions. The four regions are Northeast, Midwest, South and West. There are three city-size classifications each for Northeast and West, and four city-size classifications each for Midwest and South. They are:

(1) Northeast size A: population > 1,200,000;
(2) Northeast size B: population 500,000 - 1,200,000;
(3) Northeast size C: population 50,000 - 500,000;
(4) Midwest size A: population > 1,200,000;
(5) Midwest size B: population 360,000 - 1,200,000;
(6) Midwest size C: population 50,000 - 360,000;
(7) Midwest size D (non-MSA): population < 50,000;
(8) South size A: population > 1,200,000;
(9) South size B: population 450,000 - 1,200,000;
(10) South size C: population 50,000 - 450,000;
(11) South size D (non-MSA): population < 50,000;
(12) West size A: population > 1,200,000;
(13) West size B: population 330,000 - 1,200,000;
(14) West size C: population 50,000 - 330,000;

To illustrate the procedure of constructing the region/city-size price indices, an example is presented.

Nashville, Tennessee is a Metropolitan Statistical Area (MSA), which includes part or all of Cheatham county, Davidson county, Dickson county, Robertson county, Rutherford county, Sumner county, Williamson county and Wilson county. Nashville is among one of the 88 areas in the CPI area sample, with a population weight of 0.909. This MSA is classified as South region, city size B. In the ACCRA data, the area price index for health care for Nashville is 86.6. These two numbers are imported into a spreadsheet. Same procedure is done with other areas in South, city size B, including Richmond, Virginia, Jacksonville, Florida, and five other MSAs that are both in the CPI area sample and the ACCRA data. The index for South city size B is then computed using the following formula:

$$I_{1990,\,southB}=\frac{\sum_{i=1}^{8} w_i \cdot I_i}{\sum_{i=1}^{8} w_i}, \qquad (3)$$

where w_i is the population weight for MSA i, I_i is the price index for health care in 1990 for MSA i.

The same procedure is done with all 77 areas that are both in the 1990 ACCRA data and the CPI data, and for all six expenditure categories reported in the ACCRA data.

The calculation using the 1990 ACCRA data and the CPI sampling information resulted in 14 region/city-size price indices for six composite expenditure categories: groceries, utilities, shelter, transportation, health care, and miscellaneous commodities and services. Table 1 provides information on constructed price indices for these 14 region/city-size areas and West region in 1990.

Step 3. Constructing region/city-size price indices for 1980-1990

After careful examination of the ACCRA commodity and service sampling information, 13 expenditure categories, which are of interest to this study, are matched with these six expenditure categories. The constructed region/city-size price indices for these 13 expenditure categories in 1990 are then combined

Table 1.
Selected Region/City-Size Price Indices for 1990

Region/ City-Size	Food Home	House	Util	Trans	Health Care
Northeast A	111.0	214.7	169.3	111.3	134.6
Northeast B	106.2	132.4	118.4	103.8	112.9
Northeast C	100.8	119.0	125.2	96.2	89.7
Midwest A	99.7	120.5	103.4	102.8	104.2
Midwest B	96.3	100.6	102.8	96.1	93.8
Midwest C	97.6	99.8	96.4	100.0	88.6
Midwest D	101.0	83.0	87.9	94.3	80.2
South A	101.9	108.8	113.0	108.3	110.3
South B	97.5	97.8	103.7	100.7	98.1
South C	99.4	83.0	102.8	99.1	91.7
South D	92.0	83.5	90.1	97.9	78.7
West A	102.9	160.0	79.0	112.4	113.2
West B	101.8	107.5	89.4	110.9	113.2
West C	96.6	86.6	79.5	96.1	103.4
West Region	102.1	145.5	80.5	110.6	122.7

with the CPI region/city-size price indices using the following formula:

$$I_{t,r,k} = \frac{I_{t,r}}{I_{1990,r}} \times I_{1990,r,k} \quad , \tag{4}$$

where *t* denotes the year of interest with 1990 denoting year 1990, *r* the area, and *k* the expenditure category. The constructed indices reflect price changes over time, as well as across different region/city-size classifications. As an example, Figure 1 shows the constructed price indices for health care in five region/city-size areas from 1980 to 1990. These five region/city-size areas are Northeast A, Midwest A, South A, West A, and South D.

Step 4. Incorporating region/city-size indices for 1980-1990 into the CES

The price indices are then incorporated into the CES data using CES region and city size information for each household. One problem is that the information about city size provided in the CES uses a categorical variable, where the cutoff points are very close but not necessary identical to the cutoff points used in the CPI and the ACCRA data. With the help of the SMSA information (whether the respondent lives in an SMSA) provided by the CES starting 1986, prices are incorporated into the CES by matching the population size as closely as possible.

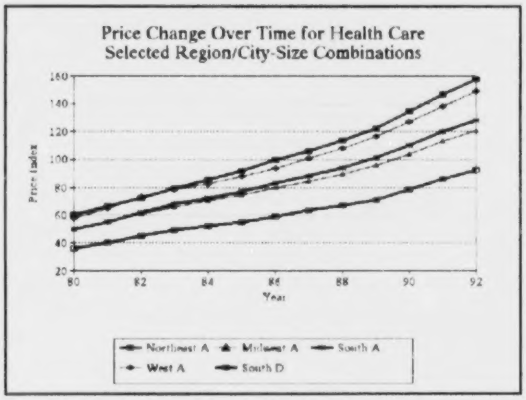
The final data set with income, price and demographic characteristics information is thus constructed. The total sample size is 8651, including 626 households in 1980, 749 in 1981, 799 in 1982, 850 in 1983, 805 in 1984, 821 in 1985, 570 in 1986, 964 in 1987, 826 in 1988, 804 in 1989, and 846 in 1990.

Problems and Limitations

This study describes an approach to adding price information to the Consumer Expenditure Survey by using the Consumer Price Index and the ACCRA Cost of Living Index. Creating such a data set enables us to further explore many research topics of demand analysis at household level. However, this approach is subject to several limitations.

First, the ACCRA data use judgmental sampling instead of random sampling. The items on which prices are collected are not the same as in the item sample of the CPI, and retail establishments from which the prices are collected are not identical to that in the CPI. Areas included in the ACCRA survey are those where Chambers of the Commerce or similar organizations have volunteered to participate; therefore, not all the areas in the CPI area sample are included in the ACCRA data. These sampling problems with the ACCRA data have inevitable introduced error in the price estimation across different areas in the U.S.

Figure 1.
Price Changes over Time for Health Care:
Selected Region/City-Size Combinations



Second, composite price indices are only available for six expenditure categories in the ACCRA data. Therefore, the prices for food away from home, household operation, equipment and furnishing, apparel and upkeep, entertainment, education, alcoholic beverages, tobacco and personal care are assumed to have the same region/city size differences in 1990. This, of course, would seriously affect the quality of the price data for these expenditure categories. A solution for this problem is to use the ACCRA raw price data to construct separate price indices for these expenditure categories. This process is currently under way.

Third, for confidentiality reasons, the Consumer Expenditure Survey does not publish the city size information for the western region. Therefore, it is assumed that all households in the West face the same prices for all expenditure categories, which is apparently not a very realistic assumption.

Given all the limitations and problems, the price data incorporated into the CES still have reasonably good quality, because the dominant features of the price differences are over-time price changes, which come from the CPI. Furthermore, the American Chamber of Commerce Researchers Association does use carefully chosen items on which the area price indices are based, and CES weights are used to compute the composite indices for different expenditure categories. The area sample used in the ACCRA data is similar to the area sample used in the CPI. To improve the quality of the ACCRA data, researchers collecting the data also stringently review all prices reported, and attempt to eliminate error and noncompliance with specifications. As long as the ACCRA data are of fair quality, using the ACCRA data on area differences in prices should be an improvement over assuming there are no area differences. Although we have no way of knowing how good the quality of this data set is, preliminary demand analysis using this data set does show that the estimated price elasticities are reasonable and close to price estimates published in previous studies using time-series data.

For researchers conducting studies on consumer expenditure and consumer demand, a data set with better price information is very desirable. Improvement can be achieved if the Bureau of Labor Statistics is able to publish raw price information for region/city-size combinations for any one year after 1980. Before that comes true, researchers still have to explore various possibilities to add price information to the Consumer Expenditure Survey data, in order to find the best approximation.

Acknowledgements

I would like to express my appreciation to Dr. Sherman Hanna, Dr. Kathryn Stafford, Dr. Wen S. Chern and Dr. W. Keith Bryant for their extremely helpful comments on this paper and other papers using this data set.

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Child Care: Parental Search and Decision-Making

Four hypotheses about parents' search behaviors and choice of child care were tested. Mothers took responsibility for child care search; they shared responsibility for choosing care with fathers. Parents relied on personal, secondary sources of information. Irrespective of their intentions to change their child's care, parents searched for information about options.

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There has been little research on how mothers and fathers share responsibility for searching for information about child care alternatives, making decisions about child care options, or daily management of care. McBride and Mills (1993) concluded that despite a changing societal context for fatherhood, "actual patterns of paternal involvement may not be that different from previous generations" (p. 471).

Research suggests parents engage in little search prior to choosing child care. Instead, they rely on secondary sources of information, particularly friends and relatives, rather than directly contacting providers or information agencies. Also, parents may have an existing body of knowledge to consult when a child care decision is needed (Widdows & Powell, 1990). By implication, parents engage in what Block, Sherrell, and Ridgway (1986) called "ongoing" search--search activities that are independent of specific purchase needs or decisions. This paper examines parents' search and decision-making relative to child care using an economic model.

We formulate four hypotheses concerning parents' participation in child care search and decisions:

H1: Mothers will take primary responsibility for child care search and daily management but share responsibility for choosing child care with fathers.

H2: Parents will use only a small number of information sources in their searches.

H3: Parents will rely more on personal, secondary sources of information than on primary or impersonal sources.

H4: Parents will search for information about child care options irrespective of their intentions to change their child's care situation.

Data Collection

A research protocol was designed that involved mail, personal, and telephone interviews with parents over a 10-week period. Parents selected were those with a child aged 2 1/2 to 4 years old, cared for by someone other than the parent on a regular basis for at least 10 hours a week, and who lived in the home with two parents (biological or adoptive).

Results

A total of 40 parents completed all interviews. The median ages of both mothers and fathers were 31 to 40; the parents had an average of 15 years of education. The sample was predominantly white; median family income was $45,000 to $59,999.

The median age of the 40 children in the final sample was 44 months; 18 of the children were male and 22 were female. Seventy-three percent of the children had one or more siblings.

Thirty children were currently in only one child care situation; the rest were in two or three. Over one-half of the children were first placed in care between the ages of one and three months old. Their median time in care was 37.5 months. In total, the 40 parents reported searching for child care 126 times during their children's lifetimes. The median number of searches per child was three.

Child Care Search and Decision-Making

Parents were asked to indicate which parent had responsibility for searching for child care, daily management of child care, and making child care decisions. As hypothesized, mothers' took the primary responsibility for child care search (83%); only 8% reported it was shared by both parents.

As expected, mothers generally had the primary responsibility for daily management of child care including picking up and dropping off the child and communicating with the provider. The daily activities most likely to be shared by both parents were: communicating with the provider, making other arrangements when the child was ill, and picking up the child when s/he was ill. More than 10% of fathers had primary responsibility for only three activities: taking the child to care (13%), picking up the child from care (10%), and paying the child care bill (13%).

Fathers were more involved in the choice of child care arrangements. Fifty-three percent reported that both parents selected the child care arrangement, 68% said they both chose the child care program, 58% said they both decided whether child care was needed, and 78% said they both chose the type of care (center, family day care, etc.). These results provide support for Hypothesis 1.

Information Sources

Parents were asked to respond to the following question regarding each day care situation their child had been or was currently in: "What sources did you use in finding this situation?" As hypothesized, the majority of parents used three or fewer types of sources across all searches. However, 25% used four types of sources while 15% used five types. Just five parents relied on only one type of information. Thus, the results provide support for Hypothesis 2.

Parents reported using a variety of types of information sources when searching for child care. In their 126 searches, parents consulted a total of 218 sources. Parents tended to rely on personal, secondary information sources. Friends or neighbors accounted for 24% of the 218 sources. Relatives represented 12% of the information sources used. While advertisements (newspaper, phone book, or posted) were frequently used (17% of the sources), 80% of parents used them only once or not at all.

Personal information sources were identified as most important in 37% of searches. Parents named friends or neighbors as the most important source of information in 24% of the 126 searches. Relatives were the most important source in 13% of the searches. Thus, the data provide support for Hypothesis 3.

Ongoing Search

Parents [illegible]ere asked in each of the five follow-up interviews whether or not they had learned something or contacted someone about a possible child care situation. Their responses suggest parents in this study can be divided into three groups: those who never learned anything, those who made a single contact or learned something once, and those who made multiple contacts or reported learning something on more than one occasion. Nearly two-thirds (25) of parents reported at least a single contact; 30% (12) reported multiple contacts.

During the follow-up period, 45% of parents did not rule out the possibility that their child would change care in the near future. Two-thirds of those parents either learned something, contacted someone about care, or both. Among the 55% of parents who indicated their child was not likely to change care situations, 60% reported learning something or having at least one contact related to child care. This result provides support for Hypothesis 4.

Conclusions and Implications

This research provides evidence that while mothers and fathers share responsibility for making child care decisions, mothers take the primary responsibility for searching for child care information and the daily management of child care. Thus, finding ways to increase fathers' involvement could improve the child care situation for parents, children, and providers. The results support previous findings that suggest parents seek little information prior to choosing child care and tend to rely on a few, personal sources of information. This research suggests that a survey of parents' search activities just prior to making a child care decision does not provide a complete picture of their information seeking.

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A Family Economic Self Sufficiency Measure

Policy makers and researchers commonly set family economic self sufficiency as a goal for welfare recipients, but the term is often not defined. The most common definition --not receiving welfare -- is too narrow. A more inclusive measure of self sufficiency is needed if researchers are to predict which young persons will become economically self sufficient adults. To that end, a measure which can be used to research this topic is proposed in this paper.

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The term economic self sufficiency is used by politicians, bureaucrats, and researchers to designate a goal for welfare recipients. Typically, however, the term is undefined. When a definition is given, the meaning is "not receiving welfare" (University of Wisconsin, 1995; Edin, 1995; Unified, 1995, U.S. General, 1995). However, some individuals who do not receive public assistance are still not economically self sufficient. Family economic self sufficiency is not a poverty measure. It is not known why some individuals become economically self sufficient and others do not; education is associated with higher income, but not necessarily self sufficiency (U.S. Bureau of Census, 1993; Schultz, 1961; Ashenfelter & Krueger, 1994). The purpose of this paper is to propose a more inclusive definition of family economic self sufficient and a preliminary model of the determinants of economic self sufficiency for young families.

Economic self sufficiency is expected to occur when an individual establishes an independent household, or soon thereafter (e.g. after completion of school). In the field of family sociology, the timing of young persons leaving home has been the dependent variable in much research. Family economic literature has focused on adequate income and welfare dependency as dependent variables. Family economic self sufficiency includes concepts from both family sociology and from family economics. The proposed measure would establish a dichotomous dependent variable. An individual would be categorized as self sufficient if he/she meets four criteria. Otherwise the individual would be considered not self sufficient. The four criteria for measuring economic self sufficiency could be: 1) receives no public assistance; 2) has adequate income, defined as 155% of the poverty threshold (Edin, 1995); 3) has manageable debt, defined as having a debt/asset ratio of <1 (Godwin, 1995); and 4) has established his or her own household.

A preliminary model of the determinants of family economic self sufficiency is based on three established models: a human capital model (Becker, 1993), a family sociology model of leaving home (Buck & Scott, 1993), and a welfare dependency model (Santiago, 1995). The National Longitudinal Survey of Youth data set includes most variables in the preliminary model. Respondents, ages 14-21, were interviewed in 1979 with follow-up interviews through 1992. Using these data, the proposed model is:

$$FESS = \beta_o + \beta_1 H + \beta_2 F + \beta_3 R + \beta_4 D + \epsilon$$

where FESS is self sufficiency at age 27; H is a vector of human capital investments at age 17 (education, work experience, technical training); F is a vector of family background variables at age 17 (mother's education, parental income, family composition & family size); R is a vector of youth resources at age 17 (youth earnings, youth savings, youth aspirations, self esteem); D is a vector of demographic variables at age 17 (race & gender); and ϵ is a random variable which captures errors of measurement and the effects of omitted components of H, F, R and D and is assumed to be uncorrelated with H, F, R and D.

Findings should have significant policy implications. Results will help identify which variables are likely to be associated with future self sufficiency. Programs could be developed to invest in the human capital variables associated with self sufficiency. Knowing which family background variables are associated with future self sufficiency of offspring should help professionals provide assistance to children as risk of dependency. Teenagers could be given incentives to save money or work depending upon findings of the study. Similarly if self esteem is significant, then efforts to increase self esteem should be made.

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Hours of Employment and Undergraduate Grades

The relationship between employment of traditional-aged undergraduate college students and their grades was examined, controlling for confounding factors such as study effort, full-time enrollment, gender, transfer status, family financial support, parental college graduation, faculty interaction, and marital status. Logistic regression analysis revealed that students who worked a larger number of hours per week had lower odds of being A students.

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Increasing numbers of traditional-aged college students are employed during the academic year, which takes time away from other student activities such as attending class, studying, and participating in campus organizations. What are the implications of these time use decisions? One might speculate that employment helps students gain skills and knowledge relevant to career goals; apply theories in the "real world"; and develop responsible time management and work patterns. Conversely, employment might interfere with class responsibilities. A review of the current literature provides limited answers to this question. Therefore, the study was undertaken to explore the relationship between undergraduate college student employment and academic achievement, controlling for confounding factors.

Methodology

Data

Data were collected from a sample of undergraduate students at a large midwestern public university and included 562 undergraduate respondents aged 27 and younger (traditional aged college students in this study). The sample consisted of 21% freshmen, 19% sophomores, 29% juniors, and 32% seniors.

The College Student Experiences Questionnaire (CSEQ) was used in the study. It was developed by C. Robert Pace at UCLA to assess the quality of undergraduate student education and sources of student progress toward important college goals. This instrument was a valuable source of information for the research question because it included information about time spent working and studying as well as an estimate of the quality of effort expended by the student. Unfortunately, the data set did not include measures of student ability such as ACT scores or high school grades.

In this sample, most of the students (96%) were single, white (83%), entered college at the institution (70%), and were full-time students (96%). Respondents were nearly equally divided by gender (55% female) and as to whether at least one parent attended college (48%). Over 70% received some financial support from their families, with 35% receiving family support for all or nearly all of their expenses. The sample was representative of the undergraduate population at the university in race, gender, and proportion entering college at the institution. However, the sample was higher than the average for the university in full-time student status.

Surprisingly, 45 percent of the respondents reported that they were not usually employed during the academic term. Employed students reported their normal weekly work commitment was 10 hours (20%), 15 hours (16%), 20 hours (12%), 30 hours (4%), and more than 30 hours per week (3%).

Analysis

Empirical examination of the relationship between grade point average and hours worked was done through a set of logistic regression analyses designed to examine levels of academic performance. The dependent variable was student achievement, measured by average grades, as reported by the students. Students grades were compared for three levels of reported grades: A compared with A- or below; B+ or higher compared with B or below; and C+ or higher compared with C or lower.

The independent variable was hours of employment reported in six levels representing five and ten hour increments, ranging from none to thirty hours of employment per week. Covariates in the analysis represented factors that might influence grades and employment including: level of family support for college expenses, parental college graduation, marital

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status, quality of student effort in coursework, full-or part-time enrollment status, gender, college transfer status, quality of faculty interaction, and time spent in class preparation (Ehrenberg & Sherman, 1987; Horn & Maw, 1994; Juster & Stafford, 1991; Levin & Tsang, 1987; Stern, McMillion, Hopkins, & Stone, 1990).

Findings

Nearly nine percent of the respondents reported that they normally received grades of A or better. Variables that were significant in predicting the likelihood of being an A student ($p<.01$) were time worked (negative); marital status (married achieved higher grades); and being a part-time student.

The model comparing B+ or better students with B or lower students did not show time worked to be significantly ($p<.01$) related to the odds of having B+ or better grades. Variables that were significant in this model were marital status (married achieved higher grades) and time spent studying (positive). Quality of effort expended by the student in course preparation was positively related ($p<.05$).

A third pattern was observed for the model comparing C+ or better students with C or lower students. The strongest predictor of the odds of receiving a C+ or better was students' reports of the quality of experience with faculty ($p<.01$). Males were more likely than females to receive a C+ or better ($p<.05$).

Discussion

For students in the present study, time spent working was predictive of the odds of having a particular grade average only for students with A grade average. However, time spent studying and quality of effort expended toward course learning were important in only the B+ model.

It appears that the relationships explored in this study are complex and possibly represent latent factors. Future analysis might include causal modeling analysis to examine latent factors that underlie the observed relationships.

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Utilizing Focus Group Interviews for Testing Theoretical Framework Viability

The purpose of this study was to test the viability of utilizing person perception theory as the theoretical framework for future consumer studies involving mature consumers and retail sales personnel. Focus groups were conducted with both groups. Results suggested that person perception theory can be utilized to explain the retail sales encounter between these two groups.

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One of the most significant trends affecting American society today is the dramatic rise in the number of persons over age 65. Marketing practitioners and marketing researchers have begun to recognize the importance of this segment, not only because of their increasing size and wealth, but also because the elderly have been identified as having marketplace needs different from other segments. Relevant to the current study are the findings that mature consumers seem especially sensitive to the treatment they receive from retail sales personnel. Although mature consumers are generally not satisfied with the service they receive (Braus, 1990; Lambert, 1979), studies, to date, have not thoroughly examined *why* mature consumers are unhappy with retail service. This is due, in part, to the fact that most studies have examined the consumer separately from the retail sales personnel. Therefore, researchers need to examine the interaction between these two groups to identify variables that better explain mature consumers' dissatisfaction with retail sales personnel.

A theoretical perspective that may be especially appropriate in examining the behavior of retail sales personnel in their interaction with mature consumers is that of person perception (Secord & Backman, 1964). Social psychologists are interested in person perception mainly because it focuses on the processes by which impressions or feelings about other persons are formed and because of its relevance to understanding human interaction , which in this case is the retail sales encounter.

The purpose of this study was to test the viability of using person perception theory as the theoretical framework for future consumer studies examining the sales encounter between retail sales personnel and mature consumers.

Method

This study utilized three focus group interviews with mature consumers and three focus group interviews with retail sales personnel. Thirty-six mature consumers (65+) participated in the consumer focus groups and thirty-one retail sales personnel were participants in the retail sales personnel focus groups. The elderly consumer samples were secured from three different elderly housing complexes. Retail sales personnel were recruited through department stores since studies have suggested that this type of retail establishment is the preference for mature consumers. Prior to the interviews, a moderator guideline, based on a thorough review of marketing literature, was prepared to identify salient concerns of each group in their interactions with each other.

Data Analysis

To evaluate the data collected in the focus group interviews, the qualitative computer program AQUAD® was used. Unlike many qualitative analysis programs, AQUAD® allows the user not only to search for words and phrases that occur in the data text and examine their frequency, but the program can extract words together with their context. The first step in analyzing the data was to prepare typed verbatim transcripts from audiotapes of the interviews. Data were then coded and the following three types of analysis were performed: (a) content analysis for frequency of words in their context, (b) content analysis for elderly consumer/retail sales personnel interaction variables, and (c) content analysis of person perception variables.

Results

Results of the content analysis for frequency of words revealed that retail sales personnel, especially those on commission, were most concerned with the amount of time required of them from mature consumers. This was juxtaposed with the fact that many mature consumers expressed concern that retail service has been worse since most stores eliminated sales personnel commissions. In analyzing the data for positive, neutral and negative elderly consumer/retail sales personnel interaction variables, mature consumers were most likely to be unhappy with the service they received from retail sales personnel. A content analysis of person perception variables revealed that the data included (a) "affective reactions" variables, which are governed by a person's prior experience and belief about a particular group of individuals, and (b) similarity-attraction variables, which suggest that persons are attracted to other individuals whom they perceive to be similar in attitudes, values and beliefs to their own. These variables explained mature consumers' comments that older retail sales personnel were more knowledgeable and more willing to help them than were younger retail sales personnel.

Conclusion

Person perception theory is a viable theoretical framework for future consumer studies examining the interaction between retail sales personnel and mature consumers. By utilizing this theory, consumer researchers can begin to better understand *why* mature consumers are generally dissatisfied with the service they receive in retail establishments. This would not only add to researchers' theoretical knowledge, but also could lead to more service satisfaction for mature consumers.

Acknowledgements

The authors would like to thank Kappa Omicron Nu for funding this research through their Graduate Research Fellowship.

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Factors That Contribute to the Wage Gap Between Black and White Women

Though the role of the woman in the labor market is more defined, there is still some ambiguity in terms of the differences that exist between black and white women. Much of the difference has to do with equity. Many studies have been conducted to examine wage differentials in terms of gender and race, but little has been done to analyze gender-specific racial differences. The wage gap that exists between black and white women is attributable to differences in human capital factors and the presence of structural labor market forces.

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There have been numerous studies conducted to investigate gender and racial differentials with respect to the wage gap. Although the role of the woman in the labor market has changed over time, very little has been done to investigate wage differentials among women by ethnic group. Today, women's roles and opportunities in the labor market may be more defined, but there still exists some disparities between the roles of and opportunities for women of different ethnic groups. This is particularly true in reference to black and white women.

In order analyze the significance of the racial wage gap between black and white women, it is necessary to know the impact(s) of black-white wage differential in general. According Gyimah-Brempong and Fichtenbaum 1993, the primary contributors to the wage gap between blacks and whites are personal attributes such as education, marital status, age and other such human capital characteristics. It is argued that blacks, particularly black women, lack the vital characteristics necessary for competitiveness in the labor market, do not possess these vital characteristics in as large a quantity as whites, or may be handicapped by consistently possessing those characteristics that are not conducive to high earnings potential. Indeed, results have shown that personal attributes have an obvious impact on the wage gap, but there are other forces at work in the labor market that influence this gap.

Structural forces, otherwise known as discrimination, have an impact on the wage gap as well. The structural approach suggests that discrimination influences the wage gap. Based on this suggestion, it is necessary that an investigation of both the human capital and structural approaches be conducted so that a clearer view of the extent to which each approach affects the wage gap between black and white women may be obtained.

Implications also exist in terms of consumer buying power. White women's wages have been increasing at an increasing rate, while black women's wages have increased at a decreasing rate (Malveaux 1986). This suggests that both groups have experienced real and nominal increases in their earnings, but the faster rate at which white women's wages have increased has made it easier for them to purchase the higher priced goods than their black counterparts.

The purpose of this study was to illustrate the impact that the human capital and structural labor market approaches have on the wage gap between black and white women. It was the contention of the author that the wage gap between black and white women is influenced by differences in such human capital factors as education, occupational classification, presence of children of ages six and below, marital status, and labor force participation rates. Furthermore, such structural forces as region and race also contribute to the wage gap between black and white women.

Methodology and Analysis

The cross-sectional data for this research were taken from the 1990 Census of Population (Social and Economic Characteristics). The dependent variable for the study is the wage gap between black and white women in 1990. It was measured as the difference in the annual earnings of black and white female wage earners. The explanatory human capital variables were the educational, occupational, child-six, marital rate and labor force participation rate gaps; the explanatory structural variables were region and race.

The following relationships were posited:

$$WG90_i = \beta_0 + \beta_1 EDG90_i + \beta_2 OCCG90_i - \beta_3 CSG90_i - \beta_4 MARG90_i + \beta_5 LFPRG90_i + \beta_6 REG + \beta_7 RACE90_i$$

where: $WG90_i$ = the wage gap; $EDG90_i$ = educational gap; $OCCG90_i$ = occupational gap; $CSG90_i$ = difference in the number of black versus white women in the labor force with their own children age(s) six and below; $MARG90_i$ = the marital rate gap; $LFPRG90_i$ = labor force participation rate gap; REG = regional classification for the state 1 is South and 0 otherwise; $RACE90_i$ = racial composition of the population in 1 if the state's black population density was above the national average and 0 otherwise. Ordinary Least Squares Regression was used to estimate these relationships. Results are shown in Table 1.

Table 1
Statistical Estimates of the Wage Gap between Black and White Women

$\beta 0$	2696.73963
$EDG90_i$	134.66665** (2.32938)
$OCCG90_i$	5.88217* (1.84959)
$CSG90_i$	-114.77932 (0.84202)
$MARG90_i$	-80.74847** (1.82784)
$LFPRG90_i$	306.25460** (2.36411)
REG	212.11847 (0.13038)
RACE90i	1840.65865* (1.32325)
R^2	0.4301
F	4.098

***significant at 0.01 ($t_* = 2.423$) ** significant at 0.05 ($t_* = 1.684$)
* significant at 0.10 ($t_* = 1.303$) $F_* = 2.18$

Conclusions and Implications

These results suggest that the labor market may not be perfectly competitive, but the playing ground is probably more level than people might think. The results also suggest that the wage gap that exists between black and white women is due in larger part to differences in human capital than structural forces. The structural forces do exist, but these results suggest that they do not have a sharply significant effect. Roughly 43% of the total variation in the wage gap can be explained by the factors which were identified. This is acceptable given the cross-sectional nature of the data.

It is interesting to find that human capital factors play such a vital role in this wage gap. Studies have shown that black women have realized increases in levels of education, are moving into the higher echelons in terms of occupational levels and have strengthened their presence in the labor force. If this is the case, one would expect to find that the wage gap has narrowed over time such that black women might realize gains in these advances. In addition, differences in human capital and the presence of structural forces would both have more of an impact in earlier years than in more recent years. Subsequent research will examine the impact that the wage gap, in presence of the other variables, has on differences in buying power.

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Korean Working Wives' Employment Cost: Married Women's Resource Consumption Depends on Employment Status

The differences in resource consumption of married women whether they are working or not were defined as the employment cost of working wives which is a new concept for this purpose. Time, energy, monetary and personal/psychological employment costs were considered. Several characteristics of married women that have effects on resource consumption were identified. Three multiple regression equations and one tobit equation were used for the quantification of the employment cost of Korean working wives.

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Introduction

The participation of married women in the labor market has increased steadily in recent years. For example, 43.0% of married women were in the labor force in 1994 as compared to 34.1% in 1990 and 33.6% in 1983. The effects of the employment status of married women on themselves as well on the household have been an issue in Korea. Certainly, the employment of wives brought additional earnings by a second worker, and contributed to raising the income of household. This economic role of wives' earnings is even crucial for many families which are at the level of poverty. The need for pursuing a career has been also increasing among housewives. Many studies, on other hand, emphasized that working wives have experienced the price of being employed. Working wives work longer, rest shorter, spend additionally for services, and experience serious role conflict in contrast to full-time housewives. These discussions about the employment cost of working wives were studied comprehensively. Furthermore, there are no estimates available for the change in resource allocation of working wives. The objective of this study was to compare and predict the differences of married women's resource consumption whether they are working or not, and determine the costs of employment for Korean working wives. They include the longer working hours (time cost), shorter leisure hours (energy cost), the increase of expenditures for services (monetary cost), and the higher incidence of role conflict (personal/psychological cost).

Data was obtained by interview during the period of November, 1994 through February, 1995. The sample totalled 652 Korean two-parent households with at least one child under 18 years old: 339 working wives and 313 full-time housewives. Time and energy resources consumption of wives were examined by average total working hours per week spend in paid work and household work, and the hours spent in leisure activities, separately. Money resource consumption of wives was estimated from average monthly expenditure for services, which included food away from home and babysitting. The role conflict related to psychological resource consumption was measured with the nine questions on a 5-point Likert scale. Multiple regression model was employed in the case of time, energy, and psychological resources consumption. Tobit model was used for money resource consumption because of censored data. The independent variables for the analyses included the number of children and the age of the youngest child in the family, wife's education, household income, whether the wife is working, and the family type. The latter two variables were dummy variables.

Findings

It was found that differences in the resources consumption by the two groups were all statistically significant from the results of the t-test analysis at the level of .001. Total working hours of married women were positively affected by the number of children, while the education of wives was negatively related. The coefficient of wives' employment status was larger than other variables. This shows the work load of wife may determine whether she is working or not. The hours spent in leisure activities of wives were positively related to the age of the youngest child, the education of wife, and the employment status of wife, however, the number of children had a negative effect. Leisure time of wife was affected strongly by employment of wife, the number and age of children were also major factors. The expenditure for food away from home was positively affected by household income, and the employment status of the wife. In contrast to this, the expenditure for babysitting service was related to all independent variables to be considered and positively affected except two variables, the age of the youngest child and the working of wife.

These results support other studies about household expenditures for services and suggest the importance of the factors related to the level of family economy, children, and the employment of wife. As earlier studies have emphasized, the role conflict experienced by wives related negatively to only two variables, the age of the youngest child and the employment status of wife. In effect, the employment status of married women was the most significant variable found in four equations of resources consumption.

Using the average values of the significant independent variables, the employment cost for working wives could be estimated. The time cost caused by the increase of total working hours and the energy cost from decreasing leisure time of working wives were about four hours and two hours, respectively. Therefore, it is predicted that working wife works about four hours longer and their leisure time decreases by about two hours in average compared to a full-time housewife. If a housewife works, she has to pay in average 15,000 won (US*$20) for food away from home and 220,000 won (US $280) for babysitting service, additionally. It is estimated that a working wife will also experience psychological cost in average five or six points higher on the Likert scale of role conflict than a housewife.

Conclusions and Implications

The average working hours of workers in industry has decreased (7.6 hours, in 1992) and the time for leisure activities has increased in Korea. The estimates of time, energy, and psychological cost show that the workload and role conflict of Korean working wives due to their dual role are serious. In the case of monetary cost of working wives, the findings of this study are important. The monetary cost amounted to the 1/5 of working wives' income, in average. The babysitting service is the largest part of the expenditures if a housewife is working. The additional expenditure for the food away from home was not significant, it is questionable that the working wives themselves will regard the food costs as a real monetary cost of employment. Nevertheless, the additional expenditures have to be taken into account in the estimates of the economic gain of housewives' employment. These results have important implications for the family which has to make the decision about whether a housewife will work or not, and keep working or not. The empirical findings related to the allocation of time and money resources, and relative importance between them among family members can be useful for research and studies for the employment of wives. The information from this study will also contribute to developing a policy for Korean working wives.

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Consumer Awareness of Laws and Regulations

Consumer knowledge on a variety of state and federal laws and regulations related to consumers' rights and responsibilities were tested. Two hundred and fifty nine households were surveyed. This study was conducted in conjunction with the Consumer Protection Division of the Northwestern District Attorney's office in Massachusetts. Although consumer awareness appeared to be high among this sample, certain differentials in the responses associated with either a specific consumer area or with the respondents' socioeconomic characteristics were observed.

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According to Uhl's model, a dynamic and interactive relationship between business self-regulation, government laws and legislation, and consumer education is fundamental in the process of consumer protection (Uhl, 1970). Feldman (1980) argues that those consumer protection measures have much broader implications than their role in the solution of specific problems suggests. Taken individually, their effect on our market system maybe negligible or moderate. Collectively, however, they may exert a profound influence on its future course.

Since business self-regulation on a full scale seems to be an unrealistic and unattainable goal to be achieved in a profit-oriented and corporate-powered system, consumer education along with the state and federal regulatory and legislative power should lead the way in protecting consumers in the marketplace. In fostering the economic welfare of consumers, governments do not only regulate the market to discourage or ban undesirable practices, they also educate consumers to be more aware of their options and be able to act more effectively in their individual interests (Lee & Zelenak, 1990). Consumer education, therefore, becomes an essential tool in protecting consumers in their pursuit of a higher welfare. However, in spite of their role in consumer protection, businesses and governments have no way of magically protecting consumers. Consequently, consumers bear the responsibility of utilizing their rights, accepting their responsibilities, being informed of the existing laws and regulations, and being active in updating those rights and responsibilities for the ultimate fairness of all market transactions.

Consumers tend generally to be willing to accept and fight for their rights more than to accept and be committed to their responsibilities (Davis, 1979; Crawford,Lawrence & Prawitz, 1995). Consumers' unfamiliarity with their rights and responsibilities does not only open the door wide for market malpractices, but also limits their abilities to make free and satisfactory choices. While consumer education has been empirically found to increase consumer knowledge (U.S. Senate Committee on Commerce,1993), accumulated consumer knowledge can, in turn, be very effective in determining the types of evaluation process which mediates the final value judgements for consumer decisions (Sujan, 1991).

Objectives and Rationale

The major objective of this study was to gauge the level of consumer knowledge on a variety of state and federal laws and regulations related directly to consumers' rights and responsibilities. Another objective was to examine the association between consumer knowledge and household socioeconomic and demographic characteristics.

The consumer awareness profile resulting from this survey will help identify strategies which would be a key element in the development of a strategic and effective community education program in consumer protection.

Methodology

A questionnaire was sent to eight hundred households in Hampshire and Franklin counties in Northwestern Massachusetts. Questions covered a variety of basic consumer concerns in the most complained about areas such as used vehicle acquisition and repairs, warranties, purchase contracts, debt collection, credit reports, security deposits, lemon law, home improvement, defective products and return policies. Four mailings were conducted within a period of six months (November 1994 - April 1995). Two hundred and fifty nine responses were received, representing a response rate of 32%.

Sample Characteristics

Two-thirds of the respondents were female, half of the respondents were between the ages of 30 and 49, over one-third of them were in managerial positions. The overwhelming majority had full-time employment, nearly one-fifth had at least a college degree or more. Over half of the respondents were married. The respondents were overwhelmingly white, two-thirds being homeowners. Three-fourths of the sample had an income of $40,000.

Findings

In general, consumer awareness appeared to be high among this sample. However, there was a differential in the response depending on the specific consumer area and the respondent's socio-economic and demographic characteristics. The respondents were less likely to provide the correct response to state laws as compared to federal laws. In particular, there seemed to be a lack of awareness in the areas of return policies, warranties, car inspections and used vehicle warranty laws. At the federal level, the respondents were generally unaware of their rights in the area of debt collection and unordered merchandise. Consumers were most knowledgeable about their rights in the areas of winning a prize, written estimates for auto repair, source of obtaining their credit history and security deposits.

The responses were analyzed using a number of socio-economic and demographic variables such as age, gender, level of education, race, occupation, marital status, income and home ownership. Consumers who were home owners and those with full-time employment were more knowledgeable than renters and those with part-time employment. Divorced and widowed consumers were more aware of their rights than single or married individuals. Surprisingly, consumers with lower levels of education were more likely to be knowledgeable of consumer laws than those with higher levels of education. The variables age, race, gender and income did not make a significant difference in the level of awareness of consumer rights.

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Factors Useful in the Prediction of Satisfaction with Choice of Retirement Community

Components comprising human and economic capital were helpful in predicting satisfaction with choice of continuing care retirement community (CCRC) and its characteristics. Perception about importance of location of CCRC was not a predictor of satisfaction. Implications for professionals include usefulness of the findings in guiding elderly consumers in effective spending of retirement income.

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The purpose was to investigate, within the context of the Deacon and Firebaugh (1988) family resource management model, the role that demands and resources (inputs) played in the prediction of satisfaction with choice of a continuing care retirement community (CCRC). Importance of location of the CCRC close to former home and importance of location close to family members were identified as demands. Human and economic capital, chosen to represent resources as inputs, was made up of four components: a) total family income, b) education, c) perceived income adequacy, and d) satisfaction with amount and availability of financial resources to meet needs.

After a purchase has been made, consumers engage in a postpurchase assessment to compare anticipated outcomes with actual outputs. When end results are consistent with anticipated outcomes, satisfaction results. Therefore, outputs were measured by the dependent variables, satisfaction with choice of CCRC and its characteristics.

Method

A random sample of 75 CCRCs, stratified by regions of the country, was drawn. Administrators of 22 of the drawn sample of CCRCs agreed to participate by providing names and addresses of residents who had joined the facility within the previous year. A questionnaire designed according to Dillman's (1978) "total design method" was sent to 650 subjects. A follow-up mailing sequence was used, and 374 returned usable questionnaires for a response rate of 58%.

Data Analyses

To determine if the hypothesized variables making up the *satisfaction with CCRC characteristics* constituted a multidimensional construct, factor analysis was performed. Two distinct factors emerged: satisfaction with care aspects (services and costs), explaining 47% of the variance; and satisfaction with aspects of atmosphere (social climate and physical appearance), explaining 11% of the variance. Factor scores were generated for use in regression modeling. Multiple regression was used to test for relationships between the independent variables (importance of location as well as human and economic capital) and each of the dependent variables (overall satisfaction, satisfaction with care aspects, and satisfaction with atmosphere). Univariate tests helped interpret the results of the multiple regression testing.

Results

It was hypothesized that knowing the demands (importance of location) and resources (human and economic capital) of consumers selecting a CCRC would help predict satisfaction with the chosen CCRC and its characteristics. Multivariate multiple regression resulted in partial support for the hypothesis, as a relationship was found between the set of dependent variables (satisfaction with the CCRC and its characteristics) and human and economic capital, $F(21, 681) = 2.44$, $p < .001$.

Multivariate tests were conducted to determine if both human and economic capital and the importance of location should be retained in the model to predict individual satisfaction variables. Human and economic capital was useful as a predictor of overall satisfaction, $F(7, 247) = 2.58$, $p = .014$; satisfaction with care aspects, $F(7, 247) = 2.74$, $p = .009$; and satisfaction with atmosphere, $F(7, 247) = 3.50$, $p = .001$. Importance of location of the CCRC, however, was helpful in neither the prediction of overall satisfaction nor of satisfaction with aspects of either care or atmosphere.

Univariate tests were conducted, and positive relationships were found between a) overall satisfaction and satisfaction with total family income, t(247) = 2.09, p = .038; and b) satisfaction with care aspects of the CCRC and satisfaction with the material things one has and uses, t(247) = 2.52, p = .013. There were negative relationships between a)overall satisfaction and satisfaction with resources available to meet a financial emergency, t(247) = -2.32, p = .021; and b) satisfaction with atmosphere and total family income, t(247) = -2.60, p = .01.

Conclusions and Discussion

The more satisfied CCRC residents were with their income, the more satisfied they were with the CCRC. The finding was somewhat supportive of past research, as Lawton (1980) found residential satisfaction among the elderly to be positively related to level of living (a measure of per capita income adjusted for household size and age).

Subjects reporting more satisfaction with the material things they had also reported more satisfaction with the care aspects of the chosen CCRC. Perhaps those who perceived they had the means to purchase things they needed or wanted were less concerned with the cost of care and therefore more satisfied with the fees charged for the services they received.

Those reporting less satisfaction with resources available to meet a financial emergency were more satisfied with the CCRC. The concept of the CCRC encompasses the guarantee of protection against the high costs of health services and long-term care. In some instances, CCRCs continue to provide care after resident's funds are depleted. It follows, then, that elderly persons concerned about adequate resources for emergencies, such as expensive health care services, would be more satisfied with a housing situation that offers security against such expenses.

CCRC residents who reported less satisfaction with their total family incomes were more satisfied with the atmosphere of the CCRC. Apparently, these consumers perceived they had "gotten their money's worth."

Implications

Professionals assisting consumers with financial decisions related to the accumulation and spending of retirement income will find the results of the study useful. The amount of retirement income consumers had and their perceptions about its adequacy were predictors of satisfaction. For example, those who were satisfied with their retirement incomes tended to be satisfied in general with the CCRC they chose. Accumulation of wealth to provide retirement income, therefore, could be stressed to those consumers concerned about housing in the retirement years. Those with lower incomes were more satisfied with the atmosphere of the CCRC, indicating they perceived they had received their money's worth. Such findings might be used to help guide elderly consumers in the effective spending of retirement income.

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A Financial Crisis Clinic Supported by Consumer Affairs Students

Data from the Financial Crisis clinic indicate that most clients are seeking serious legal counsel. Few clients visit the clinic for basic budgeting advice.

Wendy Reiboldt, California State University, Long Beach[1]

Background

For more than 20 years the Financial Crisis Clinic has counseled over 7,000 clients in a joint project with the Legal Aid Foundation, and students majoring in Consumer Affairs. This clinic serves clients who have been referred for legal counseling as a result of a significant crisis in their life related to income, budgeting, impending foreclosure, or bankruptcy.

The founder of the clinic is an attorney who volunteers his time. In addition, undergraduate students in Consumer Affairs are trained to do preliminary counseling of clients. Often times there are other attorneys who volunteer their time and offer discounts for their services.

This Study

Descriptive data were taken from a small convenience sample of intake forms used at the clinic. To date, 200 cases have been entered into the computer and analyzed (data include some of the cases from 1991-1993). It is the intent of the researcher to continue inputting data to capture a larger sample of the population, from a variety of years. This is especially important to understand historical patterns which may exist.

Results and Discussion

To get an idea about the typical case, I have provided descriptive data on 200 clients. Averages of several key variables are reported in Tables 1-4.

Table 1
Why do clients visit the clinic?

Clients have questions about . . .	
Bankruptcy	64%
Budgeting	12%
Legal advice	49%
Other	10%

(Note: more than 1 reason may be chosen)

Table 2
What are the demographics of the clients?

Marital status	%	
Married	38%	
Divorced	15%	
Separated	13%	
Single	29%	
Widowed	3%	
Average number of children		1.7
Average age of client		43.5
Average age of client's spouse		33.9

Findings indicate that clients using the clinic are generally deep in the "pit of financial despair". The typical client is 43.5 years old with a monthly gross income of $1,105.86. Thirty-eight percent of the clients are married, with their spouses' monthly gross income at $785.96.

Table 3
What is the financial situation of clients?

Income and Assets:	
Average monthly gross income of client	$1,105.86
Average monthly gross income of client's spouse	$ 785.96
Average value of total assets	$ 10,396.78
Debts:	
Average amount owed on first car	$ 3,904.78
Average amount owed on second car	$ 3,716.67
Average amount owed on house (22.5% of clients were homeowners)	$112,960.00
Average amount owed to other creditors (including credit cards, bank loans, money borrowed from family, etc.)	$ 49,665.48

The typical client does not own a home, but owes more than $3,000 on at least one car, and $49,665.48 to other creditors. And, unfortunately, the most frequently reported reason why clients visit the clinic is to ask questions about bankruptcy (64% wanted information about bankruptcy, while 49% wanted legal advice).

Table 4

What is the legal situation of the clients?

What is the proportion of clients which have

Judgments against them?	28%
Pending legal action?	34%
Had assets repossessed?	16%
Experienced foreclosure?	7%
Filed bankruptcy?	8%

Prior to their visit to the clinic, 28% currently have a judgment against them, while 34% have pending legal action. Assets have been repossessed from 16% of clients, 7% have had their homes foreclosed, and 8% have already filed bankruptcy.

Summary

These results indicate that most visitors to the clinic are already in hot water. Only 12% of clients came for budgeting advice, most clients asked more serious legal questions. Data from the Financial Crisis Clinic can provide valuable information to educators, researchers, attorneys, etc. If consumers can be educated early and perhaps seek budgeting advice rather than bankruptcy advice, visits to the clinic may be prevented.

Endnotes

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A Way of Improving Consumer Information in Korea

This study attempts to develop a simple and clear form of consumer information by introducing a price efficiency of each brand within a product category to product test reports. The price efficiency is estimated for four product categories using product test reports of the Korean Consumer Protection Board. The results show that the lower priced product categories are more efficient and also more diverse in the price efficiencies. This study implies that if consumers can determine the most efficient brand with the aid of a simple index of price efficiency, problems of information overload or misspecification can be substantially reduced.

Kee-ok Kim, Sung Kyun Kwan University[1]

Introduction

Price has a pivotal role in a market economy. It is ultimately the consumer who decides whether to or not to buy a product at a market price. Consumer market efficiency can be improved if consumers can determine the most efficient brand for a set of characteristics within a product category by evaluating efficient price.

This study suggests one way of determining the most efficient brand by introducing a price efficiency of each brand within a product category to product test results. The typical product test reports are often to be hard to understand for less informed consumers in Korea. They could cause problems of information overload or misspecification in an evaluation process, and consequently consumers become confused and make poorer decisions. To avoid these kinds of complications with product test reports, a simple and clear form of consumer information has to be developed.

The purpose of this study is to develop a summary index of product test results, that is not only simple enough to understand but also an indicator of brand efficiency in terms of the highest value per dollar spent for a set of product characteristics.

Methodology

A brand can be defined efficient if it provides the highest value per dollar spent for that set of characteristics. Price efficiency (PE) is measured as the ratio between an efficient price (P^e) and an actual price paid (P) and can be formulated as the following:

$$PE = P^e/P. \qquad (1)$$

The price efficiency of a brand sets to be one when the actual price equals the efficient price and less than one if the actual price exceeds the efficient price.

The efficient price is obtained by the regression relationship of the following:

$$P_j = a_j + b_j'X_j' \qquad (2)$$

for j=1,2,...,n and i=1,2,...,m, where P_j equals the actual price paid for the jth brand among n brands within a product category and X_j' is the ith characteristic among m characteristics of the jth brand.

Since the size of the consumer market in Korea is relatively small, the number of brands within a product category is also limited. Therefore, the regression equation is estimated for m characteristics of the jth brand separately and the efficient price for each significant characteristic is estimated by using actual characteristic value to the equation. Finally, the efficient price for the jth brand is calculated with the weighted mean of the efficient prices for significant characteristics by coefficient of determination, R^2.

Data for this study are from product test reports of the Korean Consumer Protection Board. This study uses reports on four product categories--Juicers in 1989, toothpastes, hair dryers, and washers in 1992--to find any variations of efficiency across product categories. The number of brands within each product categories are 16 for juicers, 14 for toothpastes, 10 for hair dryers, and 5 for washers.

Results

The average price efficiencies for the four products are shown in Table 1. Since all of the mean price efficiencies exceed or are close to one, the actual mean prices are less than the estimated mean efficient prices. The results across product categories indicate lower priced categories are more efficient in Korea. However, the lower the price of a product category is, the more diverse the price efficiency is. Therefore, consumers should be more cautious in selecting the most efficient brand among lower priced product categories than higher priced product categories.

Table 1
Price Efficiencies of Four Product Categories.

	Average price efficiency	Standard deviation
Toothpastes	1.25	0.454
Hair dryers	1.06	0.048
Juicers	1.02	0.014
Washers	1.00	0.001

Implications

This study shows a way of improving consumer information in Korea by estimating and adding the degree of price efficiency of each brand within a product category to existing product test reports. This information can indicate the extent to which a brand is overpriced relative to its close competitors. This information can provide a concrete basis for determining the highest value per dollar spent for a set of product characteristics. It also allows a comparison of the actual price of each brand with the efficient price at its particular combination of characteristics by multiplying the price efficiency with the actual price. This, in turn, gives useful information on product efficiencies for producers, who may use it for their pricing strategies. This study implies that improving the quality of consumer information has significant welfare implications for consumers in less developed consumer interest environments, such as Korea.

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A Decade in Perspective 1985-94: A Content Analysis of the Journal of Consumer Affairs

This content analysis was undertaken to assist the ACCI Board with their ongoing discussions on the direction of ACCI. The analysis included categorizing the subject of the papers and profile information on who publishes in JCA.

Elizabeth M. Dolan, University of New Hampshire[1]
Frances C. Lawrence, Louisiana State University[2]

Content analysis studies are effective devices to produce profiles of journals. Such a study was conducted on the Journal of Consumer Affairs (JCA) for the issues published from 1975 through 1984 (Geistfeld & Key, 1986). The purpose of the current study was to replicate the Geistfeld and Key study for the 1985 through 1994 issues of JCA for the ACCI Board.

With the exception of book reviews, all papers appearing in JCA during the 1985 to 1994, including the Colston E. Warne lectures, shorter papers, and viewpoints and communications, period were part of the content analysis. During this 10-year period, 201 articles were published, representing the work of 378 authors from 197 universities or colleges and 49 other institutions.

The majority of articles were written by one or two people. Forty-five percent of all the articles written during the ten-year period had two authors, 35% had a single author, 16% had three authors, and only 3% had four or more authors. Authors of articles published in JCA are, by-and-large, from academic institutions. Faculty from the University of California, Davis were the most frequent authors (18) during the period and the majority of these (13) appeared in the 1985-89 issues. Cornell University was represented by 17 authors, and University of Maryland by 16 authors. The most frequent non-academic affiliation for authors was the United States Department of Agriculture (13).

Academic rank of authors was relatively evenly divided: 27% were professors, 23% associate professors, and 27% assistant professors. Five percent of the authors were graduate students and 1% instructors or lecturers. Twenty percent of the authors did not hold academic rank.

An examination of authors' academic area revealed interesting results (Table 1). The majority (41.3%) of authors publishing in JCA during the 1985-94 period were from business or economics. Only 25% were from home economics, primarily the consumer, family economics, or resource management fields.

Table 1
Academic Area of JCA Authors, 1985-94

Academic Area	Total %
Home Economics	24.9%
Agricultural Economics	9.3%
Business or Economics	41.3%
Research Center	2.1%
Psychology or Sociology	4.5%
Other Academic Area	9.8%
Non-academic affiliation	7.9%
Not given	0.5%

Categorizing the articles by subject area, based on the categorizations and definitions used by Geistfeld and Key (1986), revealed that the largest proportion of articles fell into the "miscellaneous category" (18%). The most frequent topic was "information acquisition and utilization" (16.5%), followed by "policy analysis development and evaluation" (15.5%), and "consumption, income and economic issues" (13.5%) (Table 2). From 1985-89, "information acquisition and utilization" accounted for 26% of the total, while from 1990-94 only 6.9% of the articles were on this topic. During the 1990-94 period, the "miscellaneous" category accounted for almost 27% of the total.

Being intrigued by the number of articles falling into the "miscellaneous" category, a second method of categorization was employed: the "ACCI relevant subject areas" which pinpointed members' areas of interest. Using these topical headings, 32% of the articles were classified as "consumer economics," with "consumer behavior" (21.4%) the next most frequent category. Thirteen percent of the articles were on "family finance" topics. About 5% of the articles were classified as "family economics."

Table 2
Subject Categories of Articles 1985-89, 1990-94

Subject	85-89	90-94	Total
Decision Making & Information Search	6.0%	13.8%	10.0%
Consumerism & Consumer Movement	5.0%	4.0%	4.5%
Consumer Education	4.0%	-	2.0%
Careers & Programs	2.0%	1.0%	1.5%
Consumption, Income & Economic Issues	26.3%	6.9%	16.5%
Satisfaction/ Dissatisfaction	6.0%	7.9%	7.0%
Policy Analysis, Development & Evaluation	16.2%	14.9%	15.5%
Product Quality	9.0%	1.0%	5.0%
Market Structure & Operation	1.0%	11.9%	6.5%
Miscellaneous	9.0%	26.7%	18.0%

Summary

The content analysis was requested by the ACCI Board as part of the discussion on the direction of ACCI as an organization. It can also be used to stimulate discussion as to whether the Journal of Consumer Affairs is fulfilling its stated editorial policy, and meeting the needs of the membership. Additional analyses could determine if the journal's focus has changed over time.

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Home Health Care Utilization Patterns among the Elderly

This paper examined the factors affecting home health care utilization patterns among the elderly using the 1987 Medical Expenditure Survey. Major findings from this study indicated that health status, Medicaid benefit and private insurance coverage were the most significant factors predicting the utilization.

Soo Yeon Kim, Purdue University[1]

The incidence of chronic illness and disability with age has led to great attentions for researchers and policy makers on long term care service. Largely, long term care for the elderly includes institutional care (e.g. nursing home care) and community-based care (e.g. home health care). In the past decades, home health care has been the focus of long term care because it has been an important substitute for institutional care. Besides, home health care expands the concept of time and space for care and puts priority on the convenience of the patients because an array of health and social support services can be provided to clients in their own residence (Sorochan & Beattie, 1994). Empirical studies on home health care, however, are very limited. The purpose of this study is to examine the factors associated with home health care utilization of those who are age 55 and over, using the 1987 National Medical Expenditure Survey (NMES).

The data used in this study, the 1987 NMES, provide detailed information on health care expenditure by households and individuals. The sample (N=6295) was grouped into the young-old group (age 55-64), the old group (age 65-74), and the old-old group (age 75+) to compare the differences among them. The dependent variable, home health care utilization, was measured by the number of visits made by physicians and non-physician providers, such as nurses, nurses aides, therapists, and home health aides. The independent variables were grouped into four components; socioeconomic factors, demographic factors, price factors, and health-related factors. Socioeconomic factors included total family income and education. Demographic factors were gender, race, family size, availability of informal care, geographical residence, employment, and marital status. Number of bed-days and number of cut-down days represented the health status of the respondents. Price factors accounted for private insurance coverage, Medicare, Medicaid, and other public support programs. In the estimation, Tobit analysis was used because only less than 10% of respondents were found to use home care service. For the limited dependent variable, ordinary least squares regression procedure may be asymptotically biased (Kennedy, 1992).

According to the sample characteristics, Only 8.1% of the elderly were found to be Medicaid beneficiaries. Almost 80% of the elderly were beneficiaries of other private insurances. The findings from tobit analysis in the model of total sample suggested that the older, unmarried female elderly were more likely to use home care service. Health status and Medicaid benefit were found to be positively related to the utilization. The availability of informal caregiver (e.g. family members or friends) was not found to be significant factor. Among the young-old elderly group (age 55-64), the unmarried and those who had higher number of bed-days were more likely to use home care. In addition, Medicaid benefits and the availability of other insurances such as retiree insurance, CHAMPUS, VA, other public assistance and private health insurance were found to be significantly related to home care utilization.

For the old group of age 65-74, health status including number of bed-days and number of cut-down days was significantly related to home care use. Medicaid benefit was also a significant factor predicting home care use. Family size affected negatively home care utilization, which implies that family members living with elderly persons may provide informal caregiving, so the elderly with larger family size were less likely to utilize formal home care served by a variety of medical providers.

For the old-old group (age 75+), health status and Medicaid benefit were found to be strong predictors. It was confirmed that age was a proxy indicating health status. The older, unmarried female elderly were more likely to use home care.

Findings indicated that for elderly persons, health status and price factors such as Medicaid benefit and private insurance coverage were the most significant predictors determining home health care utilization. The results of this study implied that family or social resources for meeting the increasing demands for home health care by the elderly are necessary. In addition, the recent controversies over health care reform including Medicare and Medicaid programs confirm that alternatives for long term care financing should be provided in the near future.

Acknowledgements

This presentation was based on a CSR 682 class project. I would like to express my appreciation to Dr. Gong-Soog Hong for her insightful comments and help throughout the preparation of this presentation. Special thanks go to Bumjin Song for computer assistance.

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Factors Related to Household Risk Tolerance: An Ordered Probit Analysis

Jaimie Sung, The Ohio State University[1]
Sherman Hanna, The Ohio State University[2]

Based on an expected utility and simulation approach to optimal portfolios, Hanna and Chen (1995) proposed separating risk tolerance into subjective and objective components. They suggested using a hypothetical question for measuring subjective risk tolerance, and the ratio of financial assets to total wealth (including human wealth) for measuring objective risk tolerance. The purpose of this paper is to investigate the effects of income and demographic characteristics on risk tolerance. The results from this paper can be useful for financial counselors and financial planners to provide advice to their clients seeking optimal portfolios. If levels of risk tolerance vary systematically with financial and individual characteristics, financial counselors/planners can give better investment portfolio recommendations.

The data used for this analysis were from the 1983 and 1986 Surveys of Consumer Finance (SCF). The surveys were sponsored by the Federal Reserve Board and several other federal agencies and were collected by the Survey of Research Center of the University of Michigan. The sample for the 1983 survey includes interviews from a standard multistage area-probability sample of 3,824, along with a supplemental survey of 438 high income households from tax files (Avery & Elliehausen, 1987). Respondents were asked:

1. When you save or make investment, would you take substantial financial risks expecting to earn substantial returns.
2. When you save or make investment, would you take above-average financial risks expecting to earn above-average returns.
3. When you save or make investment, would you take average financial risks expecting to earn average returns.
4. When you save or make investment, would you take no financial risks

After categories 1 and 2 were combined into one, three categories are used as ordinal dependent variable in this study. In the entire sample of 2,755, 40% were willing to take above-average and substantial financial risks, 42% were willing to take average financial risks, and 18% were unwilling to take any financial risks. The proportion willing to take average financial risks was 41% for the youngest (age less than 25) while it was 24% for the oldest (age 75 and more). The proportion willing to take above average or substantial financial risks increased as education level increased (10% for less than 9 years vs. 32% for more than 16 years). Single females were less likely to take say they would take financial risks than single males and married (54% for single female, 34% for single male, and 36% for married). The proportion willing to take above average or substantial financial risks increased up to income $70,000-79,999. Those in the highest income group were most likely to take financial risks (46% for above average or substantial.)

The independent variables were income, income squared and demographic variables including age, household size, education, occupation, race, number of earners and household type. Total household pretax income was adjusted by the 1982-1984 Consumer Price Index (CPI). Income was averaged over 1982, 1983, 1984 and 1985 to provide a better estimate of average lifetime income. The ordered probit model was used to analyze the effects of income and demographic variables on risk tolerance because there was an ordering to the categories associated with the dependent variable. The ordered probit model employs maximum likelihood methods to find values of β and μ_1 (Pindyck & Rubinfeld, 1991; Green, 1993). Some of the estimates of the ordered probit model are shown in Table 1. The combined effect of the linear and quadratic terms for income squared produced an effect that was positive and approximately linear for incomes up to $100,000 per year. The effect of income remained positive, but at a decreasing slope, with the maximum positive predicted level at an income of $1,120,000. The general pattern from the dummy variables for age was that risk tolerance decreased with age after 45. Risk tolerance increased with education. Self-employed and farmers were significantly more likely to be willing to take risks than otherwise similar households with different occupations. Married respondents and single males were

Table 1 (Selected results)

Ordered Probit Analysis on Risk Tolerance

Variables	Coefficient	Significance
Income/10000	.0046	0.0001
Sq.of (Inc/1000)	-0.207E-05	0.0267
Age (vs. Age 45-54)		
Less than 25	0.0187	0.8391
25 to 34	-0.1196	0.0877
35 to 44	-0.0045	0.9500
55 to 64	-0.2031	0.0081
65 to 74	-0.2155	0.0182
75 & more	-0.3841	0.0016
Education (vs. less than 9 years)		
9-11 years	0.2420	0.0048
12 years	0.3971	0.0000
13-15 years	0.5828	0.0000
16 years	0.7866	0.0000
more than 16 years	0.8987	0.0000
Occupation (vs. no work)		
professional	0.0315	0.7449
manager	0.1462	0.1517
self-employed	0.3749	0.0052
sales	0.0902	
0.3194craftsman	0.1616	0.0951
laborer	0.0077	0.9303
farmer	0.5805	0.0173
μ_1	44.25	
Chi-square (30)	489.95	0.0000

more risk tolerant than otherwise similar female headed households. Blacks and Hispanics are less risk tolerant than otherwise similar whites, but the difference was only significant at the 10% level. Household size and the number of earners in the household did not have any significant effects on the willingness of taking financial risks.

This analysis indicated that income, age, education and household type were statistically significant variables to predict individuals' willingness of risk tolerance. In terms of the theoretical analysis of Hanna and Chen (1995), the risk tolerance measure in the 1983 Survey of Consumer Finance reflects both objective and subjective components of risk tolerance. The empirical analysis presented in this paper is consistent with that interpretation. The effect of income and of age is consistent with Hanna and Chen's concept of objective risk tolerance. As a household head ages, human wealth declines and the level of financial assets increases. Therefore, it is reasonable for reported risk tolerance to decrease, *even if subjective risk tolerance remains constant*. The lack of significant effects of age under age 45 may be reasonable, given that liquidity concerns, the need to accumulate emergency funds, the need to save to buy a home and to save for other short- or medium-term goals may make it a bad idea to take risks with investments, even if the individual is subjectively risk tolerant. The effect of occupation might reflect the self-selection process -- risk tolerant individuals were more likely to become self-employed.

The effect of gender (married and single males versus other household types) might possibly reflect differences in subjective risk tolerance, although more careful analysis and modeling of factors related to objective risk tolerance may be needed before strong conclusions can be drawn about gender differences.

To the extent that objective risk tolerance is the dominant factor in individual investment decisions, less stress should be placed on measurement of psychological measures of risk tolerance. Financial planners should focus on measurement of objective risk tolerance as proposed by Hanna and Chen (1995).

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Endnotes

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Income Sources and Education Expenditures for Single-Mother Families: Implications for Public Policy

Data from the 1990-91 Consumer Expenditure Survey were used to investigate the effects of income sources and household demographic characteristics on education expenditures by single-mother families. Tobit regression results indicated that asset income had a significant positive effect on education expenditures, while neither child support nor public assistance income were significant. Policy makers could find these results useful in designing public programs that enhance the well-being of the single-mother families.

Yoon G. Jang, University of Missouri-Columbia[1]

Single-mother families have been increasing rapidly in number during the past three decades. Children in these families often suffer from limited resources (both money income and time) because of the absence of the father from the home (Quinn & Allen, 1989). Children typically live with their mothers following disruption even though these mothers are the least able to support a family financially. However, fewer than half of all single mothers receive regular child support payments from the fathers of their children.

The purpose of this study is to identify the effect of income sources on education expenditures for single-mother families and to investigate factors associated with education expenditures among single-mother families. Since children raised by single mothers tend to have lower educational, occupational and economic attainment, compared with their counterparts from traditional two-parent families (Mueller & Cooper, 1986), the study of education expenditures is important to predict children's socioeconomic achievements from single-mother families. Because single-mother families have comprised the fastest growing segment of the poverty population during the past decades, investment in improving knowledge through formal schooling has important implications for the future well-being of these families. Further, it was recently observed (Beller, 1995) that income from all sources generally raise children's schooling, but that child support income appears to have a particularly large effect on children's educational attainment. Thus, findings of the effect of such income sources on educational expenditures by single-mother families could provide policy makers with a useful piece of information for designing public programs.

Methods

Using the 1990-91 Consumer Expenditure survey, the dependent variable was quarterly expenditures for education which includes household spending on tuition for all formal schooling as well as fees for lessons or other instruction. Because this research was investigating the effect of child support payments on educational expenditures, divorced and separated single mothers were included in the sample. Thus, the final sample consisted of 597 divorced and 319 separated mothers, totaling 916.

In addition to child support payments, two other income sources, family asset income and public assistance, were considered in the study. The presence of these three income sources was included in the model (1=have that income source) in order to assess their relationship with education expenditures. Household socioeconomic variables such as total expenditures (proxy for permanent income), mother's age, mother's education level, housing tenure status, region, family size, and number of persons in college were also included in the empirical model. Because approximately 69% of the sample reported zero value, tobit regression analysis was performed for education expenditures.

Findings

The mean value of total quarterly expenditures amounted to $4,933. The mean value of education expenditures was $88 per quarter. Among the single mothers, about 41% received child support/alimony payments. While 33.4% received income from public assistance, about 18% had income from assets.

Tobit results indicated that among the three income sources, asset income had a significant and positive effect on education expenditures for single-mother families. Although the presence of child support payments did show a positive effect, it was not statistically significant. The results further indicated that transfer income had no effect on education expenditures, holding other factors constant.

As for the effect of sociodemographic characteristics on education expenditures, the result indicated that total expenditures as a proxy for permanent income was significant. Similarly, both age and the squared term of age showed significant effects but different directions, indicating that education expenditures increase as age increases in the short-term, these expenditures decrease as age increase until the age of approximately 42, at which point expenditures begin to decrease as age increases.

Among the socioeconomic characteristics, education of mothers demonstrated significant and positive effects on education expenditures. Single mothers who owned homes spent more on education than did single mothers who rented.

It was interesting to find that White single mothers spent less for education than did non-Whites, whereas mothers who are working in service sector jobs spent less on education than did their counterparts in other occupations. Among the four geographic regions, only the urban west indicated a significant and positive effect on education expenditures. In this study, family size showed no significant effect, but the number of members enrolled in college did play a significant role in determining family expenditures on education.

Discussion and Implications

In a recent study (Beller, 1995), it was observed that child support had relatively larger effect on children's educational attainment than other sources of income. On the other hand, the results of this study showed that asset income to be the only significant source in reference to educational expenditures. Further, the presence of public assistance income had no effect on family education expenditures. This result might imply that when single-mother families had income from public assistance program, it did not directly affect their educational expenditures.

The results of this study can be useful for policy makers seeking to enhance the well-being of single-mother families. For example, programs that teach money management and/or investment techniques might influence a family decisions regarding investment in education for the future, while helping that family build financial assets in the present. Furthermore, because many single-mothers who work in low-paying service sector jobs typically spend less on education, programs could be designed specifically for that population. In that way, guidance could be offered on ways to cope with financial difficulties in the present, along with ways to plan meaningfully for a brighter future.

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Endnotes

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After Sale Services and Consumer Complaints: An Empirical Study

This paper utilized in-depth interviews to examine the relationships between the quality of after sale services and consumer complaints. The data indicate that after sale services can be classified into two categories: claim services and other after sale services. Both types of after sale services are associated with customers' level of satisfaction/dissatisfaction and their complaint behavior.

Yaolung James Hsieh, National Chengchi University[1], Taiwan

Service Quality and After Sale Services

Researchers have emphasized customer satisfaction (Walker 1995) and proposed several models since 1970s (Berry and Parasuraman 1991; LaTour and Peat 1979; Oliver 1980a; Parasuraman, Zeithaml, and Berry 1985, 1988). Of which, the disconfirmation model has been widely accepted (Cadotte, Woodruff, and Jenkins 1987; Oliver 1980a, 1980b; Olson and Dover 1979). In the disconfirmation model, among others, service quality has been an important consideration. Service quality is especially important in the services industry, given its natures of intangibility, inseparability, perishability, and heterogeneity (Zeithaml, Parasuraman and Berry 1985).

Although critical in leading to identification of service quality and customer satisfaction, after sale services have not acquired sufficient attention from scholars. Especially for some services industries with "credence" features (Zeithaml 1981), such as the life insurance industry, after sale services may be as important as services delivered during the purchase process, if not more important (Hsieh 1995a). In a services industry like this, customers' level of satisfaction after purchase is usually "undecided". As claimed by Berry and Parasuraman (1991), in the services industry, the outcome of service delivery is far more important than the process. However, since the probability of an insurance loss is usually low, customers may not be able to perceive the quality of outcomes (claims) as well as the process of delivering a claim after purchase. As a result, it is not easy for customers to judge whether he/she has made a satisfactory purchase. In other words, although customers have expectations of outcomes and process of services, they rarely have chances to perceive their quality. Levels of customer satisfaction, thus, may be more difficult to decide in the life insurance industry than other services industries.

Nevertheless, customers may feel "dissatisfied" when they compare their non-claim after sale services with what their friends, relatives, or other customers (either from the same firms or other firms) have received. For example, friends of these customers may receive phone calls from sales representatives regularly and greeting cards or gifts on holidays and these phenomena may be perceived as friendliness, hospitality, and caring shown by sales reps. Activities like this can make these customers jealous and feel dissatisfied. Although this dissatisfaction may not cause customers to discontinue their policies, they may complain to friends about their own sales representative's "indifference" or be reluctant to introduce new customers to this firm. No matter whether the customer adopts "voice responses," "private responses," or "third party responses" (Singh 1988) to complain, the damage can be huge and widespread, and cannot be ignored by business.

After Sale Services in the Life Insurance Industry

So what are after sale services that customers want in the life insurance industry? How can life insurance firms provide these services to satisfy their customers' needs? From a relational marketing perspective, customers' needs of after sale services may vary which is critical to success in the life insurance industry (Hsieh 1995b; 1994), . However, before a life insurance firm can apply relational marketing appropriately, it should understand all the possible after sale services that their customers need or require to reduce the possibility of complaints and thus improve customers' level of satisfaction.

Purposes of the Study

The purpose of this study, consequently, is to examine types of after sale services that customers need or require and their association with levels of satisfaction and/or consumer complaint behavior. Since patterns of after sale services have not been proposed in the literature (to the author's knowledge), a qualitative approach is more appropriate in this exploratory research. Additionally, most researchers in this area have treated customer satisfaction as a static phenomenon (Cadotte, Woodruff, and Jenkins 1987; Oliver 1980a) and some even view customer satisfaction as a unidimensional construct (Tse and Wilton 1988). These assumptions may not be true in the life insurance industry. For example, policy holders may feel "undecided" about their level of satisfaction/dissatisfaction of life insurance purchase, given its credence nature. However, these customers may be satisfied with his/her agent's regular chat, but ***later*** dissatisfied with the firm's ignorance of not sending useful health information. The impact of these intertwined "feelings" has not been studied in detail and is hard to decide. To quantify these feelings at this stage may lose insights of the relationships between after sale services and customer satisfaction/dissatisfaction.

Method

With qualitative methods' advantages in exploring rich and in-depth responses, this study employs in-depth interviews to investigate patterns of after sale services and their relations to consumer complaint behavior. To explore after sale services in depth, questions regarding antecedents and consequences of after sale services are also addressed. The interviews were conducted mainly in Mandarin Chinese and later translated by the author appearing as excerpts in this paper. Common responses and themes are analyzed and patterns are provided for consensus as well as disconfirming opinions among informants.

Findings

In total, there are 137 in-depth interviews with life insurance policy holders in Taiwan. Among these informants, 63 are male and 74 are female. Their ages range from 20 to 57, with most between 20 and 39. Occupations of these informants include professors, engineers, students, salespersons, housewives, baby-sitters, small business owners, secretaries, accountants, agents, doctors, language teachers, photographers etc. The time span of interviews is from 30 minutes to three hours with most interviews between 30 minutes and one hour.

The results indicate that after sale services can be classified into two categories: claim and other after sale services, and most informants care about claim more than other after sale services. However, because the probability of loss is low, most customers rely upon other after sale services to decide life insurance firms' service quality and their level of satisfaction. Other after sale services are classified into: 1. regular oral communications (face-to-face or by telephone), 2. regular publications with health information, 3. provision of new product information, 4. social feedback/responsibility, 5. pre-notice of due premium payment, 6. methods of premium payment, 7. gifts and greeting cards, 8. changes of policy contents, and 9. consumer education. These after sale services were then compared to five dimensions of service quality proposed by Parasuraman, Zeithaml, and Berry (1988, 1993): tangibles, reliability, responsiveness, assurance, and empathy. These widely accepted dimensions of service quality, however, are inconclusive in regards to after sale services examined in this study. This variation in classification may result from industrial difference (Richins 1983) or cultural difference (Hsieh and Scammon 1993; Yao 1987). After sale services appear to be associated with customers' level of satisfaction /dissatisfaction and their complaint behavior. A classification scheme of after sale services is available from the author as well as implications for management, researchers, and public policy makers[2].

Endnotes

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Informal Money Management Education: Perceptions of Teens and Parents

Teens and their parents agree that informal money management education is occurring in the home. They also agree on the topics (budgeting, credit, savings, and allowances) that are being used in this process. Parents, however, listed the topics of savings nearly three times as frequently as their teens. Fewer than five parents or teens mentioned that informal money management education was occurring by parental example.

Cathy Faulcon Bowen, The Pennsylvania State University[1]

Introduction/Method

National tests (Brobeck, 1991, 1993) indicate that high school and college students are not prepared to handle real life situations involving money that they will face as young adults. Also, many publications offer parents advice on ways to teach children to handle money responsibly. For this study, the qualitative responses that parents and their academically talented teens, henceforth teens, provided to questions about money management were compared. Parents were asked, "Do you think you or your spouse have helped your child learn to manage money? If so, what kinds of things have you done or do?" Teens were asked, "Do you think your parents have helped you learn to manage money? If so, what kinds of things have they done or do?"

Sixty-two teens in a convenience sample of students attending the Governor's School for the Agricultural Sciences during the Summer of 1993 and their parents were surveyed separately. All scholars responded to the questions at the beginning of a regularly scheduled class that was part of the five week program. Parents received the survey via mail. Forty-six usable surveys were returned by the parents. No follow-up of the nonresponding parents was conducted. For analysis purposes, the responses that 46 teens provided were matched and compared with those of their parents (46 parents).

Findings

The majority of the parents were in the 41-50 age range. The mean age of the teens was 16 years. Fifteen of the teens received an allowance and more than half (26) indicated they had a paid job during the school year. Except for one teen, all were from married couple families. More than half (28) of the parents indicated that their total household income was $45,000 or higher. Forty-four parents and 40 teens said yes to the above questions and provided explanations.

Savings was the topic most frequently mentioned by parents (22 times) followed by budgeting (13), talking to (13), allowances (8) and checking (5). The most frequently mentioned topics by teens were budgeting (8), checking (8), saving (8), and allowances (7). Only four teens indicated that they learned about money management by observing their parents and only three parents indicated they were teaching teens to manage money by setting an example. Few parents and teens (4 or less) from the same family indicated that the same topic was used to teach about money.

Implications

These findings suggests that parents may be missing everyday opportunities to teach children about managing money. Explanations provided along with the topics listed by parents suggest that parents are not involving their children in hand-on activities that are part of routine family money matters. Parents were unaware that they are teaching their children to manage money indirectly through their own behavior.

Educators who provide classes or educational programs on money management could take appropriate opportunities to gently remind parents that they are there child's first and most influential teacher for many skills, including managing money. In addition, parent could be encouraged to involve older teens in routine family financial matters such as balancing the checkbook, recording monthly expenditures for utilities, housing and food.

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Project Based Learning for Customer Service and Consumer Voice

This presentation described a course developed to expose students in consumer economics to project management. The course also was designed to acquaint students with customer service and consumer voice as the supply and demand sides of constructive dialogue.

John E. Kushman, University of Delaware[1]

Motivation

Many new jobs are in economic sectors and types of firms where a career is a series of projects. An example is producer services, a sector in which firms provide specialized, typically information and technology intensive, services to producers. Examples are computer software resellers and systems consultants. New graduates from consumer economics have an advantage to the extent they have experience with and confidence in being project staff and managers. A feature of business reorganization and reengineering is a focus on product differentiation through superior customer service. Going deeper are efforts to create a customer focused culture within organizations. An important element of these new developments is capturing and cultivating consumer voice, before and after purchase. The current business environment offers unusual opportunities to polish the crown of consumer sovereignty. Programs in consumer economics, consumer affairs or consumer studies should give graduates skills to take advantage of their sovereignty and background and skills to institutionalize the importance of consumers.

The current popularity of problem based learning in universities is recognition in academia of the importance of listening to student consumers about their needs and of working in partnership with them to meet those needs. A course about consumer voice and customer service using PBL is a first-hand experience of a differentiated product. The lessons are heard, seen and experienced. A project, such as developed in this course, imbeds many learning problems in a framework for experiencing project management skills.

The Course Problem

The course, Consumer Service and Consumer Voice, confronts students with justifying, explaining, planning, developing, implementing and evaluating a university student consumer voice system. More specific problems are (1) What does the theoretical and empirical literature suggest may constitute consumer satisfaction? (2) What types of information are available to organizations about postpurchase experiences and behaviors, and at what relative costs? (3) In general, what are potential consumer postpurchase behaviors? (4) Do companies that make a concerted effort to satisfy their customers, including redress for dissatisfied customers, get a favorable market position or differentiate their products? (5) What issues have special significance or arise especially in the context of joint seller-consumer production processes? (6) What constitutes an organization with a consumer focused culture, and how does an organization create and sustain such a culture? and (7) What part can a consumer relations contact point or consumer affairs department play in creating consumer satisfaction and making the organization successful?

Evolution of the Project

Each of these questions implies many more specific questions. The course evolves through:

I. Background Stage: Students become more expert in general areas of consumer voice and customer service. These areas include theories of consumer satisfaction, dissatisfaction, complaining behavior, product differentiation, and optimal seller response.

II. Market Specific Stage: Students judge what parts of the general findings are applicable to student consumer/university market interactions. For instance, the teaching/learning experience is a joint consumer/seller production process. The literature suggests joint production processes present special opportunities for consumers to affect the quality of service they receive and special challenges to the seller to work cooperatively with the consumer.

III. Implementation Stage: Students design and implement (as feasible) processes to create an effective student consumer voice system. This stage of the project provides experience with group processes and defining and solving specific problems. It is important at this stage that the course project be meaningful and familiar to students.

IV. Operations Stage: Students operate the student consumer voice system. The course can best operate in a fictitious setting, where the flow of complaints or other consumer input can be controlled by the project manager (the professor). Course and academic year schedules do not lend themselves to responsibility for ongoing customer service operations. The course setting can be a good pilot test for a system to be adapted for commercial use, depending on the project client.

V. Evaluation Stage: Students and industry experts critique their student consumer voice system. The system should capture consumer information accurately and get it to responsible parties quickly. The system should allow management to check performance in responding to consumers and to detect problem patterns. The system also should include mechanisms for evolving as needs change.

Project Organization

The instructor serves as overall manager of the student consumer voice system project. In this role, he/she continually defines, refines, limits and restates the problems. The students organize themselves around the problems, research the issues or experiment with potential solutions, report their findings, and reorganize for subsequent project stages. The instructor/manager provides resources through reserved library books, journal excerpts, conference folios, video tapes, video field trips, and an existing computerized student consumer voice data base. The data base is deliberately deficient in design and execution. There also is a fictional context of operating and managing the data collection which is deliberately incomplete and poorly organized. Thus, the students have an example of an information collection and management tool specific to the student consumer setting, which they must improve.

Centralized Computer Database

The computerized data base uses Complaints Desk,[2] a software package designed for recording, organizing, tracking and evaluating customer feedback by product or service, customer, method of communication, responsible department, and other parameters. In moving from the Background Stage to the Market Specific Stage, the existing computer system provides a tangible, realistic and familiar setting for students. In moving to the Implementation, Operation and Evaluation stages, the Complaints Desk software gives a flexible framework for students to try various approaches to problems. Because the computer program and data are central to a student voice system, they provide a unifying element in the overall project. For instance, capturing student consumer voice in the computer system must be designed to facilitate redress by responsible departments and to permit oversight by management. Background issues must be brought to focus on the data input process, while operation and evaluation issues must connect to outputs from the data base.

Presentation of the System

The course culminates with presentation of the student consumer voice system to university officers who question the students and critique their product. Experience with the first offering of this course suggests that officers like the Dean of Students, Vice President for Student Life, or similar university officers have genuine interest in the project and the students. Knowing such officers will receive their product at the end of term is highly motivating for students. If the university is not an appropriate setting for a fictitious system, perhaps because a good duplicate system exists on campus, the instructor may seek a small, local firm to cooperate in testing a potential customer service system.

Endnotes

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2. Complaints Desk is a trademark of Spectrum Computer Technologies, Niagara Falls, New York.

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Perceived Usefulness of Credit and Insolvency Measures Among Financial Planners and Educators

A Delphi study resulted in the identification and evaluation of measures for assessing exposure of consumers to insolvency and credit problems. There was agreement between the educators and planners regarding the usefulness of 23 out of 31 measures. Behavioral measures were generally perceived as more useful than financial ones, and simpler, easier-to-ascertain measures were rated as more useful than more complicated ones.

Sue Alexander Greninger, The University of Texas at Austin[1]
Karrol A. Kitt, The University of Texas at Austin[2]
Vickie L. Hampton, The University of Texas at Austin[2]
Joseph A. Achacoso, The University of Texas at Austin[3]

One important area where financial and behavioral measures can be of use to consumer educators involves credit and insolvency. DeVaney (1994) observed that financial ratios could be more predictive of insolvency than demographic variables. Langrehr and Langrehr (1989) concluded that comparing debt to income seemed to be a good way to determine ability to handle debt but noted that consumers and creditors were inconsistent in judging credit capacities. Lytton, Garman and Porter (1991) emphasized the need for a consensus among financial experts regarding the most useful ratios. Personal finance textbooks by Garman and Forgue (1994) and Gitman and Joehnk (1993) have included both financial ratios and behavioral patterns as measures that might be useful in identifying credit overextension. Mason and Griffith (1988) pointed out the need for collaborative efforts between educators and planners by saying, "Input is needed from academicians and practitioners before competent ratio analysis can become standardized and widely used" (p.83).

Objectives and Methodology

The specific objectives of this research were (1) to identify and evaluate financial and behavioral measures for assessing exposure of consumers to insolvency and credit problems and (2) to compare the perceived usefulness of the measures among financial educators and planners. This research was a part of a larger project undertaken to identify and refine measures for determining the financial well-being of families and individuals. The project utilized a Delphi research method which was developed in the 1950s by the Rand Corporation for defense research. A Delphi study provides a mechanism for dialogue, information exchange, and consensus development among experts dealing with multi-faceted problems. The key participants in this study were a research team, an advisory committee, and a panel of experts. The panel resulted from invitations sent to a random sample of 400 Certified Planner licensees and 340 financial educators who belonged to the Association of Financial Counseling and Planning Educators. Initially, 122 planners and 159 educators agreed to participate. In Round 1, 122 of 281 (43%) responded to an open-end questionnaire about financial well-being concepts. From the responses, two closed-end questionnaires were developed by the research team. Credit questions were included in the second half of Round 2, which had an overall response rate of 56%. The resulting panel was comprised of 64 planners and 87 educators, after financial counselors were omitted due to their small number.

The measures included in the questionnaire were 20 financial ratios and benchmarks and 16 behavioral patterns identified in the literature or by the panel of experts. All measures were rated by the respondents on a Likert-type scale where 1= "absolutely useless" and 5 = "very useful." Frequencies were run for the total sample as well as the two subgroups. Differences between the planners and educators were assessed by t-tests.

Results

The behavioral pattern perceived as most useful by the panel of experts was "being so far behind on payments that credit collection agencies are calling," which received an average rating of 4.73. Five other behavioral measures were rated higher in usefulness than the most highly-rated financial measure, "time household could meet living expenses with existing reserves," which averaged 4.47. The five behavioral measures rated higher than this financial measure were: borrowing to meet normal living expenses (4.62); regularly exceeding the borrowing limits on credit cards (4.53); receiving 2nd or 3rd notices from creditors (4.53); missing payments, paying late, or paying some bills every other month (4.52); and using a cash advance on one card to pay off another debt (4.48). The ratio receiving the highest usefulness rating was total debt payments ÷ income (4.28). The only other ratios that had mean ratings over 4.00 were total expenses ÷ income (4.02) and non-mortgage debt payments ÷ income (4.01).

In general, behavioral measures were perceived as more useful by the panel of experts than financial ratios and benchmarks. The average usefulness rating was 4.23 for the behavioral patterns compared to 3.84 for the financial measures. Within the financial measures, standards or rules of thumb received higher usefulness ratings than ratios derived from either the balance sheet or cash flow statement. Educators and planners shared similar perceptions regarding usefulness on 23 or the 31 credit and insolvency measures. Educators gave significantly ($p<.01$) higher usefulness ratings than planners on two behavioral patterns: using cash advances on one card to pay off another and paying only the minimum required payment on credit cards. The following six measures were also perceived as significantly ($p<.05$) more useful by educators than planners: assets ÷ liabilities; non-mortgage debt payments ÷ income; time household could meet current debt payments with liquid assets; receiving 2nd or 3rd notices from creditors; missing payments, paying late, or paying some bills every other month; and being so far behind that collection agencies are calling. When ratings were summed to create aggregate scores for behavioral and financial measures, educators rated the usefulness of each group significantly higher ($p<.001$) than planners.

Summary and Conclusions

In summary, there was considerable agreement between educators and planners on the relative usefulness of the behavioral and financial measures included in this study. Measures perceived as more useful tended to be simpler and easier-to-ascertain than those rated as less useful. For example, liquid assets/current debt averaged 3.74 whereas time household could meet current debt with existing liquid assets averaged 4.15. Educators generally gave higher usefulness ratings to the measures than planners. Findings from this research regarding the more useful insolvency and credit measures need to be disseminated to educators, planners, counselors and other financial service personnel. Further classification of the behavioral measures to identify those that might serve as early warning signals for future problems would be helpful. In addition, research determining the perceptions of credit counselors, loan officers, and consumers regarding the usefulness of these measure needs to be done. Finally, these measure need to be tested on at-risk populations of consumers as well as on existing data sets of larger, more broadly representative populations to determine how well they differentiate degrees of credit difficulties and predict future insolvency problems.

Acknowledgment

The authors express their appreciation to the Certified Financial Planner Board of Standards for funding this research.

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Spending Behavior of Families Receiving Welfare or Public Assistance, 1992-94

Welfare reform is in the offing. This paper examines the spending behavior of families receiving welfare income. Using 1992-1994 Consumer Expenditure Interview Survey data, an initial comparison is made of characteristics, expenditures, and durables between families receiving welfare income and families not receiving such income. A second comparison examines welfare families where no members work with welfare families where at least one member works.

William D. Passero, Bureau of Labor Statistics[1]

Introduction

This paper examines the spending behavior of families receiving welfare income. The Quarterly Interview Survey component of the Consumer Expenditure Survey (CE) serves as the data source. Families[2] receiving welfare income and those not receiving such assistance are compared in terms of their demographic characteristics, the allocation of expenditures, and consumer durables they have use of. Statistical tests show that expenditure shares for most major item categories are significantly different for these groups.

Comparisons of two groups among recipient families illustrate the effects of working status on expenditures and durables. Statistically significant differences appear in comparing expenditure shares of welfare families with working members to shares of welfare families with no working members.

The data base is created from all families interviewed between January 1992 and March 1995. The interviews are split into two data sets - one containing 3,100 interviews from recipient families, the other having 64,085 interviews from nonrecipient families. Weighted annual means, expenditure shares, and percent distributions are computed for selected characteristics, expenditure groups, and durables for the two samples. T-tests on expenditure shares ascertain whether the spending patterns of the groups are significantly different.

Methodology

In this section, welfare income is defined and the CE Interview survey is described. The reference period of families in this study is outlined, and the variables in the research data base are enumerated broadly.

Samples

The CE data base contains variables identifying families that receive welfare income. Welfare is defined to include AFDC, job training grants, such as Job Corps, and other less prevalent sources of broad and targeted assistance. Families indicating they had received welfare income during the 12 months prior to the interview comprise the data set of welfare income recipients for this paper.

Five other sources of public assistance from the Interview survey are included to provide a more complete picture of the assistance welfare families receive. These sources are: Supplemental Security Income (SSI), Food Stamps, public housing, other government housing support, such as rent supplements or ownership subsidies, and Medicaid.

Data source

The Quarterly Interview Survey obtains one year's worth of data from each sample family. Each family undergoes five interviews. In the first interview, demographic data for each member, housing unit information, and inventory data on appliances and vehicles are collected. Expenditure data for the previous month are collected for bounding purposes. The remaining four interviews are conducted at three month intervals, wherein families report expenditures made over that period. At the second and fifth interviews, data on sources and levels of income are collected for members and the family for the 12 months prior to the interview. Overall, about 90 to 95 percent of all expenditures are covered by the Interview survey instrument.[3]

Families are interviewed using a rotational sampling procedure. About 20 percent of the sample is replaced every quarter as families completing their participation are replaced by new families.

Reference period

Data from interviews completed from January 1992 through March 1995, covering calendar years 1992 to 1994, are analyzed. Expenditures reported over the 1992-94 period do not manifest significant shifts in spending behavior that would render combining data from the three years suspect.

Variables

Demographic variables include age, race, sex, and education of the reference person; number of persons in the family, children under 18, earners, and owned vehicles; housing tenure; family and worker composition; and types of assistance received. These variables reflect the family characteristics at the time of each interview.

Twenty-four expenditure variables are created including total expenditures, food, housing, apparel, transportation, health care, entertainment, and personal insurance and pensions. The remaining categories of spending are combined into "All other expenses". Expenditure variables aggregate all component purchases made during the reference period. They are multiplied by four for annualization prior to computation of means.

Consumer durables variables are created from the inventory of major household appliances collected during the first interview in which a family participates[4]. These variables are: stove, microwave oven, refrigerator, home freezer, dishwasher, clothes washer, clothes dryer, garbage disposal, color television, home computer, sound equipment, and video equipment. This inventory is not updated during subsequent interviews.

Each interview is treated as an independent observation. Each family in the sample is assigned a population weight which can change between interviews, depending on the characteristics of other families interviewed. Means and percent distributions are computed using these weights.

Statistical comparisons

To examine the spending behavior and socioeconomic characteristics of sample families, annual weighted means are generated for relevant categories. Since mean estimates hide variations in the allocation of the expenditure dollar by groups due to differences in spending levels, they have been converted to shares of total spending. T-statistics determine if the shares allocated to each category are significantly different.

Families receiving welfare income vs. families not receiving welfare income

Families receiving welfare income were larger and had more children than families not receiving welfare. (See Table 1.) The reference person in recipient families was significantly younger than in nonrecipient families. AFDC is a major form of welfare income, directed to families with children, who are younger than the average family. Many recipient families had working members and owned a vehicle though not as many of each as nonrecipient families.

Table 1
Selected family characteristics by receipt of welfare income, 1992-94

	Family receives welfare	Family receives no welfare
Age of reference person	37.5	48.2
Number of:		
Persons	3.7	2.5
Children under 18	1.9	0.6
Vehicles	0.8	2.0
Earners	0.8	1.3
Percent:		
Under 65	95	78
Black	35	10
Renter	77	33
Husband-wife families	26	54
Single parent, at least one child under 18	44	5
Single person	7	30
All other families	22	11

Over three-fourths of the recipient families rented their living quarters, while homeownership was the norm for nonrecipient families - only one-third were renters. An elderly reference person among recipient families was rare, as 95 percent were under age 65. This was true for just over three in four nonrecipient families. Thirty-five percent of recipient families had a black reference person, versus 10 percent in nonrecipient families. Single-parent families made up over two-fifths of the recipient sample, while about 26 percent were husband-wife families. Single person units were relatively infrequent recipients at only 7 percent. In contrast, husband-wife families made up the majority of nonrecipient families. About 3 in 10 were single person families, while just five percent were single-parent families.

Recipient families typically received one or more other sources of assistance. (See Table 2.) Food Stamps and Medicaid were common benefits received by recipients. Almost 35 percent received these three benefits together. Another 26 percent received them along with SSI, public housing, or other government housing support. Welfare with either Food Stamps or Medicaid alone were obtained by 14 percent. Welfare with any other combination of assistance was the mix for another 13 percent. Only 12 percent received welfare income only.

Table 2
Percent distribution of other assistance received by families receiving welfare income, 1992-94

Welfare with:	
Food Stamps and Medicaid	34.9%
Food Stamps, Medicaid and other government housing support	11.4
Food Stamps, Medicaid, and SSI	7.6
Food Stamps, Medicaid, and public housing	7.1
Medicaid	7.1
Food Stamps	6.9
All other combinations	13.3
Welfare only	11.7

Table 3
Shares of average annual expenditures by receipt of welfare, 1992-94

	Family receives welfare	Family receives no welfare
Total expenditures	$15,165	$29,940
Housing	38.2	30.8
Food	24.7	14.9
Transportation	13.4	18.8
Apparel	5.7	4.6
Personal insurance and pensions	4.2	10.0
Entertainment	4.1	5.1
Health care	2.4	5.6
All other expenses	7.3	10.3

Recipient families spent $15,165 on average during 1992-94, about one half the $29,940 average for nonrecipient families. (See Table 3.) Among all major item categories, t-statistics show the share differences are statistically significant at the 99-percent level. Over three-fifths of total spending for recipient families was allocated to food and housing. Transportation took the next largest share at about 13 percent. Under six percent went for apparel, while entertainment and personal insurance and pensions each made up four percent of spending. Health care accounted for over two percent, while the remainder went to all other expenses.

Housing and transportation accounted for about 50 percent of total spending among nonrecipient families. Food was relegated to third place at 15 percent. Ten percent of spending was directed to personal insurance and pensions. Expenditure shares for health care, entertainment, and apparel varied by about one percentage point and accounted for over 15 percent of spending. All other expenses accounted for the final 10 percent.

Table 4
Percent of families having exclusive use of selected durables by receipt of welfare, 1992-94

	Family receives welfare	Family receives no welfare
Stove	95.7%	97.7%
Refrigerator	94.0	95.0
Color television	90.8	92.9
Video equipment	54.0	70.5
Microwave oven	53.2	77.6
Clothes washer	50.4	73.3
Sound equipment	47.4	57.5
Clothes dryer	35.5	67.8
Garbage disposal	18.9	36.6
Dishwasher	18.0	49.1
Home freezer	16.6	31.8
Home computer	6.5	21.2

Except for the most prevalent household appliances, the percentage of recipient families having each consumer durable was smaller than the corresponding percentage of nonrecipient families. The size of the difference varied. (See Table 4.)

Most U. S. families had refrigerators, color televisions, and stoves regardless of whether they were recipient or nonrecipient families. Slightly more than half of all recipient families reported having a microwave oven, clothes washer, or video equipment, while just under one-half had sound equipment. These rates were two-third to four-fifths the rates for nonrecipient families.

Approximately one-third of recipient families had a clothes dryer, while about one-sixth had a dishwasher, garbage disposal, or home freezer. These rates were just over half the rates for nonrecipient families except for dishwashers where the rate was slightly over one third. A home computer was least likely to be found in either group. Just one in five nonrecipient families and one in 16 recipient families logged on to their own computer.

Recipient families with working members vs. recipient families with no working members

How do the 'working' poor stack up against the 'nonworking' poor? Focusing solely on recipient families, expenditures, demographic characteristics, and consumer durables of families which have no working members are compared with families with working members. Only families with a reference person under 65 are included since they are more likely to have members eligible for the workforce.

The definition of a "working" member of a family is similar to the BLS definition of the "working poor". A member over 15 years old who has been employed full- or part-time for at least 27 weeks over the past 12 months is "working", regardless of whether pay is received.[5]

Table 5

Selected characteristics for recipient families with reference person under 65 by presence of working members, 1992-94

	Has no working members	Has working members
Age of reference person	34.2	37.4
Number of:		
Persons	3.5	4.2
Children under 18	2.1	1.9
Vehicles	0.5	1.5
Earners	0.3	1.6
Percent:		
Female	81	53
Black	42	25
Renter	85	69
Husband-wife families	15	44
Single parent, at least one child under 18	63	19
Single person	8	4
All other families	14	33

Data collected in 1,773 interviews from nonworking families and 1,158 interviews from working families are analyzed. The reference person in nonworking families was slightly younger than the reference person in working families. (See Table 5.) Working families were larger; however, the average number of children in the nonworking group was somewhat higher. It is striking that so many working families had more than one earner.[6] A female reference person was the rule, dominating the nonworking group and mustering a slight majority among working families. The ratio of nonblack to black reference persons was about 3 to 2 in the nonworking group and 3 to 1 in the working group. Renting was common in both groups, though almost 3 in 10 working families were homeowners.

Table 6

Percent distribution of other assistance received by recipient families with reference person under 65 by presence of working members, 1992-94

	Has no working members	Has working members
Welfare with:		
Food Stamps and Medicaid	37.5%	34.0%
Food Stamps, Medicaid, and other government housing support	15.3	6.1
Food Stamps, Medicaid, and public housing	10.0	3.1
Food Stamps, Medicaid, and SSI	8.7	4.0
Food Stamps only	6.7	7.6
Medicaid only	4.6	10.9
All other combinations	13.6	10.7
Welfare only	3.6	23.6

The preponderance of female heads among nonworking families is evident as almost two-thirds were single parent with at least one child under 18. (In over 95 percent of these families, the parent was female.) Only 15 percent contained a husband and wife. Working families displayed more variety. Over two-fifths were husband-wife families. Single parent families with at least one child under 18 represented another one fifth.

Over one third of the families in both groups received Food stamps and Medicaid along with welfare income. (See Table 6.) With that exception, the most frequent combinations of added assistance each group got differed significantly. Over 25 percent of nonworking families obtained some kind of housing support with Food Stamps and Medicaid. About 9 percent of nonworking families received SSI with Food Stamps and Medicaid, to rank fourth most frequent. Under four percent received welfare only.

Apart from the welfare-Food Stamps-Medicaid combination, the largest portion of working families - just under one-fourth - received no other aid. About one in nine got Medicaid only as additional assistance, while nearly eight percent obtained Food Stamps as their sole outside aid.

Table 7

Shares of average annual expenditures for recipient families with reference person under 65 by presence of working members, 1992-94

	Has no working members	Has working members
Total expenditures	$11,528	$21,288
Housing**	43.1	33.8
Food**	30.0	20.1
Transportation**	9.1	17.6
Apparel*	6.3	5.3
Entertainment	3.7	5.1
Personal insurance and pensions**	1.0	7.1
Health care**	0.9	3.0
All other expenses**	5.9	8.7

*Share difference is significant at 95 percent level.

**Share difference is significant at 99 percent level.

The impact of working members is seen in the fact that working families reported average total expenditures almost 85 percent higher than nonworking families. (See Table 7.) The allocation of the expenditure dollar also differed in statistically significant ways between groups. The nonworking group, with lower overall expenditures, apportioned a greater share to necessities - 43 percent to housing and 30 percent to food - than its working counterpart. Working families spent only 20 cents of every expenditure dollar on food and about 34 cents on housing. Able to accommodate their food and housing needs with a smaller share of total spending, working families apportioned a larger share to transportation. T-statistics for the food, housing, and transportation share differences were significant at the 99-percent level.

Personal insurance and pensions occupied a minor share among expenditures of the nonworking group. Working families, by contrast, allocated a share over seven times larger. The difference in share was driven by payroll deductions for Social Security and pension plan contributions incurred by employed members of working families.

Health care made up a significantly higher share of total spending for working families than for nonworking families, though for both groups, their shares were lower than for nonrecipient families. Medicaid was frequently received in each group accounting for these share differences.

A smaller percentage of nonworking families had use of most durable items than working families. (See Table 8.). As with recipients and nonrecipients of welfare, most families in either group had ovens, refrigerators, and color televisions. Note the working group rate for these items was higher than the rate for nonrecipients of welfare. About 20 percent of the families in each group had garbage disposals. Both groups were primarily renters, so that, along with refrigerators and stoves, disposals probably were part of their rental units.

Table 8

Percent of recipient families with reference person under 65 having exclusive use of selected durables by presence of working members, 1992-94

	Has no working members	Has working members
Stove	94.1%	97.8%
Refrigerator	92.3	96.2
Color television	88.4	94.7
Video equipment	47.9	64.8
Microwave oven	44.3	67.1
Sound equipment	43.7	56.2
Clothes washer	41.6	64.0
Clothes dryer	27.0	49.1
Garbage disposal	18.8	20.4
Home freezer	14.3	19.0
Dishwasher	14.2	24.6
Home computer	4.1	10.3

Nonworking families had sound and video equipment, and home freezers at about three-fourth the rate of working families. Working families had sound and video equipment at rates comparable to nonrecipient families. Home freezers were relatively rare at rates of under 20 percent for both groups.

The biggest spreads between working and nonworking families appeared for microwave ovens, clothes washers, and clothes dryers where nonworking families reported rates 22 points below working families. About two-thirds of the working families had the former two items, while just under one- half had the latter.

Among the remaining durables, about one in four working and one in seven nonworking families had a dishwasher. Home computers were scarce with barely one in ten families in the working group and one in 25 in the nonworking group reporting a home computer.

Conclusions and future work

Families receiving welfare income were younger, larger, with more children, but fewer earners than families not receiving welfare income. They were likely to be renters, and were more frequently single-parent families. Recipient families reported average expenditures about half as large as nonrecipient families. Not surprisingly, recipient families directed a greater share of these expenditures to necessities than nonrecipient families. The latter apportioned more to transportation, personal insurance, and pensions. With the exception of three widely-owned appliances, lower percentages of recipient families had consumer durables.

Recipient families were not homogeneous as the working member analysis demonstrates. Similar in some respects, working and nonworking families varied sharply in composition. Single-parent families were the rule for nonworking families, whereas working families often were headed by a husband and wife. Nonworking families averaged just over half the total spending of working families. This lower spending dictated that nonworking families apportion almost three-fourths to food and housing, compared to just over half for working families. Working families allocated more to transportation, personal insurance, and pensions. Differences between the groups in percentage of families having selected durables essentially replicated the differences in rates between recipient and nonrecipient families.

Future research will examine which family characteristics are correlated with observed spending for major categories. Initial analysis of variance of food expenditures has yielded promising results. Further work will be undertaken in this direction.

Endnote

1. Economist, Division of Consumer Expenditure Surveys, Room 3985, 2 Massachusetts Avenue, NE, Washington, DC 20212
2. "Family" will be used instead of "consumer unit", the usual CE term, for convenience.
3. Expenditures for postage, housekeeping supplies, personal care products, and nonprescription drugs are among the items not collected in the Interview survey.
4. The questionnaire lists 15 categories. Twelve variables are created from these categories, representing the number of appliances of that type the family has.
5. The BLS definition of "working poor" includes members who sought work as well.
6. Earners are more loosely defined than "working" members. An "earner" is over 14 years old and has worked any number of weeks, for pay, over the past 12 months.

The Changing Food at Home Budget: 1980 and 1992 Compared.

Numerous new links between diet and health have been established and publicized recently. When analyzed using both a share index and logistic regression, data from the Consumer Expenditure Survey indicate that patterns for food at home expenditures change from 1980 to 1992 for several demographic groups. Although most changes are in more healthful directions, a few in less healthful directions are also found.

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NOTE: All material contained herein is solely the responsibility of the author. Any opinions expressed in this paper are those of the author and do not constitute policy of the Bureau of Labor Statistics. This paper is substantially abridged. For a complete copy contact the author.

Introduction

In the 1960's, it was wheat germ and yoga. In the 1970's, it was granola and jogging. In the 1980's, it was oat bran and aerobics. It seems that every decade has had its own prescription for good health, and the 1990's are no exception. The news continually reports findings from medical studies that link foods with health conditions, either good or bad. But are consumers following this advice? Examined here are data from the Diary portion of the 1980 and 1992 Consumer Expenditure Survey (CE), and newly published results from the Diet and Health Knowledge Survey (DHKS).

The Data

CE data

The Diary component of the CE is comprised of reports from more than 5,000 consumer units[2] annually. Participating families receive a diary for two consecutive one-week periods in which they record expenditures for many different items. Purchases of food for home consumption are documented in great detail. In 1980, a total of 10,433 diaries are available for study; in 1992, a total of 11,713 diaries are available. All observations are treated independently. Results in Table 1 are weighted to reflect the population.

Report on Nutrition Attitudes

Between April 1989 and May 1992, the U.S. Department of Agriculture conducted for the first time the Diet and Health Knowledge Survey (DHKS). In the survey interviews main meal planners and preparers in U.S. households are asked specific questions to find out their knowledge and attitudes about dietary issues: For example, "In your opinion, should your diet be lower or higher in saturated fat or is it just about right compared with what is most healthful?" (p. 22)

Shares analysis

The Share index

Because the Diary survey does not collect quantities of food purchased--only the level of expenditure is available--alternative methods must be used to ascertain whether food purchasing habits have changed over time. One way is to examine how the total food budget is allocated. Although a t-test on the shares[3] might seem appropriate at first, the t-test does not conclusively indicate that food purchases are changing. For example, if the price of butter doubles, and the average family purchases half the quantity as a result, then the share of the food budget spent on butter does not change, assuming there are no changes in other food prices or quantities purchased. A share index is used to compare shares after adjustment with the Consumer Price Index (CPI). If the share of total food expenditures for a particular food item in 1992 is different from the share found in 1980, and if that share difference cannot be accounted for by price changes alone, then relative to total food purchased, the amount of the specific food item purchased must have changed over time.

The computation of the share index is straightforward. Table 1 shows that meat, poultry, fish, and eggs account for 34.4 percent of total food at home expenditures in 1980. That figure drops to 26.4 percent in 1992. During that time the price of meat, poultry, fish, and eggs rises 42.3 percent, compared to 54.8 percent for all food at home. If the quantities purchased

Table 1

Changes in Food Purchases, All Consumer Units, 1980 and 1992.

	All Consumer Units			
Item	1980	1992	Percent Change in CPI: 1980-92	Share Index
Consumer Units ('000s)	85,188	100,082	N/A	N/A
Income before taxes[a]	$17,985	$33,407	N/A	N/A
Family size	2.7	2.5	N/A	N/A
Age of reference person	46.1	47.4	N/A	N/A
Number in consumer unit:				
Persons under 18	0.8	0.7	N/A	N/A
Earners	1.4	1.4	N/A	N/A
Average weekly expenditures for:				
Food at home	$33.22	$49.99	N/A	N/A
Cereal and Bakery	4.27	7.90	N/A	N/A
Meat/Poultry/Fish/Eggs	11.43	13.22	N/A	N/A
Dairy Products	4.47	5.80	N/A	N/A
Fruits and Vegetables	4.92	8.24	N/A	N/A
Other food at Home	8.11	14.84	N/A	N/A
Share of Food at home:				
Food at home	100.0%	100.0%	54.8%	N/A
Cereal and Bakery	12.9	15.8*	80.6	1.05
Cereal/Cereal Products	4.2	5.4*	82.1	1.09
Bakery Products	8.7	10.4*	79.5	1.03
Meat/Poultry/Fish/Eggs	34.4	26.4*	42.3	0.83
Beef	13.2	8.1*	34.5	0.71
Pork	7.3	6.0*	56.0	0.82
Other Meats	4.6	3.6*	41.3	0.86
Poultry	4.5	4.7	40.2	1.15
Fish and Seafood	2.8	2.9	73.4	0.92
Eggs	1.9	1.1*	22.2	0.73
Dairy Products	13.5	11.6*	41.4	0.94
Fresh Milk and Cream	7.1	5.1*	36.4	0.82
Other Dairy Products	6.4	6.5	48.3	1.06
Fruits and Vegetables	14.8	16.5	89.3	0.91
Fresh Fruits	4.3	4.9*	117.2	0.81
Fresh Vegetables	4.2	4.9*	99.9	0.90
Processed Fruits	3.5	3.9*	67.7	1.03
Processed Vegetables	2.8	2.9	55.0	1.03
Other Food at Home	24.4	29.7*	43.9	1.31
Sugar and Other Sweets	3.6	3.9*	47.1	1.14
Fats and Oils	2.9	2.8	45.4	1.03
Miscellaneous Foods	8.8	14.8*	67.6	1.55
Nonalcoholic Beverages	9.2	8.2*	25.1	1.10

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a Complete income reporters only.

* Change in shares is statistically significant at the 95 percent confidence level.

of meat, poultry, fish, and eggs and of total food at home remain constant, then the share in 1992 should be about 92 percent its level in 1980 (1.423/1.548 = 0.919). So if quantities remain unchanged, meat, poultry, fish and eggs should account account for about 31.6 percent of the food budget in 1992. Because they only account for 26.4 percent, the quantity of meat, poultry, fish, and eggs purchased declines relative to total food purchases. In fact, the share (26.4 percent) is only about 83 percent of its expected value (31.6 percent); hence, the share index is shown as 0.83, or 26.4/31.6.

The share index is easy to interpret. The level of the index minus one shows by what percent the specific quantity has changed relative to all food. Thus, the food group consisting of meat, poultry, fish, and eggs comprises about 17 percent less of total food in 1992 than it does in 1980 (Table 1).

For ease in analysis, terms relating to food "purchases" and "consumption" are used interchangeably hereafter.

Overview

The share index for cereal and bakery products and for other food at home indicates an increase in relative purchases of these products, while for all other food items (meat, poultry, fish, and eggs; dairy products; and fruits and vegetables) the index indicates a relative drop in purchases. The index for other food at home seems to derive its large magnitude from strong increases in miscellaneous foods, probably because miscellaneous foods includes frozen meals, which proliferate in the 1980's. The share of the food budget allocated for eggs is almost cut in half between 1980 and 1992. This is consistent with results from the Department of Agriculture (Putnam and Allshouse 1993, p. 37).

Although most of these changes are in more healthful directions, consumption patterns in two food groups decline unexpectedly. After a period of stability (1980-90), the percentage of all families reporting fish and seafood expenditures falls from 28.2 percent in 1990 to 24.9 percent in 1992. Fish and seafood prices increased 3.4 percent, compared to 2.7 percent for beef, and decreases for pork (1.5 percent) and poultry (0.8 percent). To the extent that poultry and fish are substitutes,[4] it makes sense that families purchase less fish and seafood and more poultry under these conditions. Other surveys also show declining purchases of fish and seafood from 1990 through 1992. (See full paper for details.)

Fruits and vegetables are more intriguing. The share indices for fresh fruits and vegetables decline, although the increase in percent reporting for all families is about 7 percent for fresh fruits and fresh vegetables alike. Data from the Nationwide Food Consumption Survey also show a substantial decrease in average annual household food use of fresh fruits and fresh vegetables from 1977/78 to 1987/88 (Lutz et al., 1992, p. 20). How can percent reporting increase, yet amounts consumed decrease? Although more families are buying, those who do purchase are buying less on average. Evidence from the CE data shows that this is indeed what happened. Real (i.e., inflation adjusted) mean weekly expenditures for families that report fresh fruit purchases decline from $3.35 in 1980 to $2.29 in 1992, while fresh vegetable expenditures decrease from $3.28 to $2.52. The fact that percent reporting increases while average expenditures decrease for fruits and vegetables underscores the importance of using both a share index and logistic regression to get a fuller picture of how purchases are changing.

Logistic Regression Results

Logistic regression, or "logit" (Kennedy 1992), is used to estimate the probability that a particular family will purchase a certain type of food. An increase in the probability of purchase indicates that more families are purchasing the good, and is thus a good indicator of whether consumption increases due to an increase in number of families that purchase rather than an increase in number of purchases by families that already consume the food regularly.

A "control" family is one against which other families can be compared. For these purposes the control group is defined as a family: consisting of a husband, wife, and child; in the middle income group; living in an urban area; not participating in the food stamps program; participating in the Diary survey in April, May, or June; whose reference person is 35 to 64 years old, not black, and never attended college. Dummy variables and interaction terms are used to control for variation by demographic groups and across time periods.

Families that do not report purchases of groceries (about 11 percent) are omitted from the sample to avoid bias--if the family buys no groceries at all, then the probability that the family buys any specific food is zero. Also omitted are families for whom no diary placement date could be found (less than 3 percent of the total sample). The logit results are not weighted to reflect the population.

The Control Group

Changes in probability of purchase for the control group are described to give a sense of how probabilities are changing for the "average" or "typical"

Table 2. Probabilities of Purchase, 1980 and 1992: Fish and Seafood, Eggs, Diary Products

Logistic Regression Results: All Consumer Units Characteristics	Eggs: Parameter Estimates 1980	Eggs: Parameter Estimates 1992	Eggs: Predicted Probability 1980	Eggs: Predicted Probability 1992
Control Group	0.4102	-0.5722	60.1	46.0
Intercept[a]	0.0904	-0.9378*	60.4	46.2
Age (35 to 64)				
Under 35	-0.1154*	0.1282	52.4	41.4
65 and Over	0.2277*	-0.0944	65.4	49.3
Income (Middle Tircile)				
Lowest Tircile	-0.0482	0.0102	59.0	45.0
Highest Tircile	0.0159	-0.0622	61.0	45.3
Incompl. Reporter	-0.1587*	0.2635*	56.3	48.6
Family Composition[b] (Husband/Wife/Children)				
Single Male	-0.7515*	0.2944	35.5	25.4
Single Female	-0.0518	0.1732	34.3	27.8
Husband/Wife Only	-0.1094	0.0951	52.6	39.9
Single Parent	-0.2837*	0.2531	51.6	39.7
Other Family	-0.0753	-0.0649	58.3	42.5
Family Size (Two Adults, One Child)				
Number of Adults[c]	0.0621	0.1645*	61.6	51.6
Number of Children[d]	0.2263*	0.0335	63.3	50.4
Children Squared	-0.0307*	0.0031	N/A	N/A
Race (White and Other)				
Black	-0.0032	0.0821	60.0	47.9
Education (No college)				
Some College	-0.0302	-0.0869	59.4	43.1
College Graduate	0.0732	-0.3388*	61.9	39.5
Degree Urbanization				
Rural	-0.2426*	0.1732	54.2	44.2
Food Stamps				
Participates	0.1889*	0.0712	64.5	52.5
Month Surveyed				
Jan/Feb/March	0.0838	-0.0213	62.1	47.5
July/Aug/Sep	0.0512	0.0199	61.3	47.7
Oct/Nov/Dec	0.0836	0.0505	62.1	49.3

* indicates parameter estimate is statistically significant at the 95 percent confidence level.

a Predicted probability is calculated for an increase of 0.01 in the intercept.

b Predicted probability is calculated with family size taken into account. For example, a single person consumer unit consists of one adult and no children. A single parent consumer unit consists of one adult and one child.

c Predicted probability is calculated for a husband and wife with two children, one of whom is at least 18 years old.

d Predicted probability is calculated for a husband and wife family with two children, both of whom are under 18. Because the increase in number of children also affects number of children squared, the entire change is included here.

family (Table 2). Four food groups exhibit statistically significant decreases in probability of purchase for the control group. These are beef, pork, and other meats (5 percent); fish and seafood (6 percent); eggs (14 percent); and dairy products (4 percent). Changes in probability are not found to be statistically significant for any other food groups.

These groups contain foods which are high in saturated fat (diary products), cholesterol (seafood),[5] or both (eggs and beef, pork, and other meats). The DHKS shows that 54 precent of all main meal planners believe their diets should be lower in fat, and this may be one reason for the decreased probabilities of purchase. When compared to saturated fat specifically, only 44 percent think their diet should be lower, compared to 48 percent who think it is about right. Similarly, when asked about cholesterol, only 41 percent think their diet should be lower, compared to 53 percent who think it is about right. (USDA 1996, pp. 21-23.)

Income Elasticities

An increase in income elasticity indicates that it takes less of an increase in income to induce a purchase of a given item than it did before. Income elasticity can be estimated using regression results. However, before regressions can be performed, several factors must be taken into account.

First, both expenditures and incomes are adjusted for inflation before regressing. To achieve this, each individual expenditure is divided by the level of the CPI for that item in the appropriate year, with the resulting real expenditures aggregated to the food group level. Income is divided by the CPI for all goods and services.

Second, a regression method must be selected. The method used in this case is the Heckman two-stage procedure (Heckman 1979).

Third, the income data in the second stage are subjected to a Box-Cox transformation (Box and Cox 1964) to correct for heteroscedasticity. Therefore, instead of regressing expenditures directly on income in the second stage, expenditures are regressed on the fourth-root of income.

Fourth, the sample is limited to complete income reporters[6] before first or second stage regressions are run.

The Models

The Probit model (results not shown) is identical to the Logit model described earlier; the second stage model differs only slightly. First, instead of a dichotomous dependent variable, the second stage uses a continuous dependent variable (i.e., actual level of expenditures for the food group under study.) Second, a continuous income variable is used (after being transformed as described above). Interaction terms are used to find whether income elasticities change over time.

Estimating Income Elasticity

The formula for income elasticity (often symbolized by η) is:

$$\eta = (0.25bI^{0.25})/Y$$

Results

In Table 3 real expenditures and real incomes are averaged for each group across time before use in the income elasticity equations. In this way, differences in elasticity are due solely to differences in the income parameter estimates.

The parameter estimates are accompanied by footnotes designating statistical significance. Parameter estimates are considered to be statistically significant based on standard t-test results. Statistical significance indicates the parameter estimate is significantly different from zero.

Elasticities are analyzed for statistical significance in a different way. Part of the elasticity equation (b) is calculated by adding parameters appropriately, regardless of statistical significance. Elasticities in 1980 are considered to be statistically significantly different from zero if the sum of the 1980 parameter estimates is non-zero according to an F-test. Elasticities in 1992 are analyzed to see if they are statistically significantly different from the 1980 elasticities, rather than from zero.

General observations

As expected, the individual food categories are income inelastic in each year. Even so, the food categories can be placed into three distinct groups: those for which elasticities increase over time for most groups (cereal and bakery products, fish and seafood, and other food at home); those for which elasticities are positive in 1980 for most groups, and do not change over time (beef, pork and other meats, dairy products, and fruits and vegetables); and those for which elasticities are statistically indistinguishable from zero, regardless of year (poultry, eggs, and fats and oils). Although some predicted elasticities are negative (indicating "inferior" goods), they are not statistically distinguishable from zero.

Conclusions

CE data are analyzed from three different aspects (price-adjusted budget shares; probability of purchase; income elasticities) to see if food expenditure patterns have changed from 1980 to 1992. Some changes have occurred for the better. For example, it appears that consumers are reducing consumption of eggs. On the other hand, consumption of fruits and vegetables has also declined, although frequency of purchase has increased for most groups. Some foods have become more responsive to changes in income, although others generally show stable elasticities across years.

Taken together, these findings indicate that consumers are reacting to the ever-changing news about relationships of food to health, though some groups respond differently than others. Future work analyzing trends by demographic groups should provide further insight into changing patterns.

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Endnotes

1. Economist, Division of Consumer Expenditure Surveys, 2 Massachusetts Avenue NE #3985, Washington DC, 20212.
2. Consumer unit: a single person living alone or sharing a household with others but who is financially independent; members of a household related by blood, marriage, adoption, or other legal arrangement; or two or more persons living together who share responsibility for at least two of three major types of expenses--food, housing, and other expenses. For convenience, "consumer unit" and "family" are used interchangeably in the text.
3. See Paulin (1990) for formula.
4. Lee (1992) finds that poultry and seafood are substitutes (p. 275), with a cross-price elasticity of 0.36 (p. 278).
5. According to Pennington and Church (1985) a large boiled egg contains 274 milligrams (mg) of cholesterol (p. 52). This compares to 3½ ounce servings of canned oysters (230 mg, p.68), lobster (200 mg, p. 67), and shrimp (150 mg, p. 70).
6. The family must report at least one major source of income. However, even complete reporters may not provide a full accounting of income for all levels and sources.

Spending Patterns of Generation X

No singular name or phrase accurately describes 18 to 28 year olds in 1994 -- thus they are called Generation X. The demographic characteristics and spending patterns of this age group are compared between 1980 and 1994. Then, using a standardization technique, 1980 characteristics for 18-28 year olds are used to 'weight' 1994 expenditures for the 18-28 age group. These standardized expenditures are compared to Generation X's actual expenditures in 1994.

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Demographers identify six different population groups in the U. S. today. One of these is cryptically described as "Generation X". This group is considered to have a generally dour view of current life with low expectations for the future. Such an outlook would be expected to have implications for their behavior as consumers. This paper analyzes how the socioeconomic and demographic characteristics of Generation X are related to its spending patterns.

The word "generation" in the name "Generation X" is actually a misnomer, in that what is really being referred to is a cohort. A generation is defined by dates of birth. A cohort is defined by important events or experiences that take place in individuals' formative years. Members of a cohort share a similar "coming of age" (Meredith & Schewe, 1994) period in their lives. Their tastes from the music they enjoy to family values are in large part shaped by this "coming of age" period. Wars, social movements, or the economic situation during these years also shapes their lives. As an example of the difference between a generation and a cohort, we would call those people *born* during World War II the "World War II Generation." We call those that *matured* during World War II the "World War II Cohort."

Research by psychologists and cultural anthropologists have resulted in characterizing Generation X in four segments. They are described in Chart 1(Rice, 1995).

Various studies delimit Generation X differently by age (Rice, 1995). Some include 30 year olds as the oldest members of this cohort; some have a younger upper boundary. The lower boundary also fluctuates. Although most studies include 18 year olds in Generation X, one can not be certain that these younger people in the cohort are not the beginning of a new cohort in the population (conversely, Generation X may end up including people who are only 8 years old today.) Only in hindsight will the boundaries become clearer. The lack of a true defining moment results in a cohort that is defined by segments and is hard to delimit. No single name or phrase can reflect this population conclusively - hence Generation X. For this paper's purposes, Generation X includes consumer units in which the reference person is between ages 18-28 in 1994, or those born between 1966-1976[2].

The structure of this paper is as follows. Generation X's characteristics in 1994 are compared to the same age group in 1980. The characteristics examined include family composition and education

Chart 1
Description of segments comprising Generation X

Cynical disdainers	Pessimistic and skeptical, this segment receives most of the press attention;
Traditional materialists	Most like baby boomers; positive, optimistic, striving for the American dream;
Hippies revisited	Replay the lifestyle and values of the Sixties and express themselves through music, fashion, and spirituality;
Fifties machos	Conservatives who believe in stereotyped gender roles and are the least accepting of multiculturalism.

level of the reference person. Then, using a standardization technique, the 1980 distributions of these characteristics for the age 18-28 group are used to 'weight' the 1994 expenditures for the same age group. Generation X's actual expenditures in 1994 are then compared to these standardized expenditures. The point of this exercise is to see how comparable are the 18-28 age group's spending patterns in 1994 and 1980.

The Consumer Expenditure Survey

The Consumer Expenditure (CE) Survey collects U.S. consumer unit expenditure and income data by socioeconomic and demographic characteristics. Data are collected by both a quarterly Interview panel survey and a Diary or record keeping survey. The data used in this analysis are from the Interview component. The Interview Survey collects data quarterly from about 5,000 consumer units (CU)[3]. The samples for the Consumer Expenditure Survey are national probability samples of households designed to be representative of the total U.S. population. The ability to relate expenditure data to specific groups is what makes the CE survey a strong tool in a cohort analysis.

Whether a CU belongs to Generation X (ages 18-28) is determined by the age of the reference person. The reference person is the first person mentioned by the respondent when asked to "Start with the name of the person or one of the persons who owns or rents this home." It is with respect to this person that the relationship of the other consumer unit members is determined. The reference person also defines the characteristics of the consumer unit (e.g. age, occupation, race, education for tabulation and analytical purposes).

Generation X in 1994 compared to 18-28 year olds in 1980

Generation X represents 13.6 percent of 1994 consumer units with a reference person over the age of 18, down from 20.2 percent in 1980. The seemingly small relative size of this cohort in proportion to the total adult population reflects an aging U.S. population, particularly of the Baby Boomer cohorts. The average income of a Generation X headed consumer unit in 1994 was $19,567. Their aggregate income represented 8.1 percent of total aggregate income.

Roughly 60 percent of Generation X consumer units completed some college or are college graduates. It is difficult to determine the final status of this cohort's education level since many are still in what are generally considered their college years (ages 18-21). Nonetheless, a large percentage of this cohort has had at least some college. The percentages for categories above high school graduates will likely increase as this cohort moves out of typical school attending ages. Compared to 1980, a larger percent of Generation X completed at least some college. Although a larger percentage of Generation X'ers have finished 4 years of college, there was a larger percentage of the corresponding age group that continued education past college in 1980.

Table 1.
Distribution of age group 18-28 by education level, 1980 and 1994

Education Level	*1994*	*1980*
Elementary/never attended	2.6	1.7
Less than High School	11.6	12.1
High school	27.3	32.2
Less than 4 years college.	38.8	36.0
College, 4 years	13.0	9.7
More than 4 years college	6.7	8.3

A second important characteristic with implications on how consumers spend their money is family type. Obviously a family with children will spend money on items such as baby products, childrens' apparel, or toys. Over 40 percent of Generation X CUs live in single person CUs, while 32 percent of this cohort are married. About 27 percent of Generation X families have children , of which one third or 9 percent of the total are single parents. About 20 percent of the cohort are classified as other type of families.

Table 2.
Distribution of age group 18-28 by family type, 1980 and 1994

Family Type	*1994*	*1980*
Husband and wife	11.7	16.1
Husband and wife with children under age 6	13.6	17.8
Husband and wife with children age 6 or older	4.8	5.3
All Other		
Husband and wife	2.3	1.9
Single parent	9.0	6.5
Single	41.1	42.0
Others	17.5	10.6

In 1980, about the same percent of 18-28 year olds were single (41 percent) but there were more married couples (40 percent vs. 32 percent) compared to 1994. Thus, it appears that Generation X may be marrying later, if at all. On the other hand, only about 30 percent of 18-28 year olds in 1980 had children. So although Generation X is less likely to be married than their 1980 counterparts, they are only slightly less likely to have children. The increase in the number of single parent families from 6.5 percent in 1980 to 9 percent in 1994 may account for this.

Standardization Technique

This paper uses a standardization technique previously used by the Bureau of Census to measure the quantitative effects that a change in households' demographic, social, and economic characteristics has on income and poverty levels and income inequality. For our purpose, this same technique can be used to answer "What would happen to 18-28 year olds' spending pattern in 1994 if consumer units had the same set of demographic, social, and economic characteristics that existed for the 18-28 year olds of 1980?." This model will use family type and education level to represent the social, demographic, and economic characteristics.

Mean consumer unit expenditures in 1994 are defined as a weighted average

$$E_{94} = Sp_{i94}e_{i94} \qquad (1)$$

where E_{94} is the overall mean expenditure in 1994, p_{i94} is the proportional weight of the ith group in 1994, and e_{i94} is the mean expenditure for the ith group in 1994. The standardized mean expenditure is represented by

$$E_{94} = Sp_{i80}e_{i94} \qquad (2)$$

where p_{i80} is the ith group's proportion of all households in 1980. An equivalent way to write this equation is

$$E_{94} = E_{80} + Sp_{i80}De_{i} \qquad (3)$$

where E_{80} is the overall mean expenditure in 1980 and D_{a} is the change in mean expenditure for the ith group between 1980 and 1994.

For this preliminary analysis, family type and education of reference person are the two characteristics in the standardized output. Since there are six different family types and six different education levels, crossing these two characteristics result in 36 different CU types. These characteristics are broken down as follows:

Family type
- Single
- Husband and wife only
- Husband and wife with children
- Other husband and wife
- Single parent
- Other families

Education of reference person
- Less than High School graduate
- High School graduate
- Some college
- Four years of college
- More than four years college (graduate)
- Other education (elementary/never attended)

The standardized expenditure values for 1994 are presented in table 4 showing what spending would look like in 1994, given the 1980 population distribution. Using these results, the spending patterns of the 18-28 age groups in 1980 and 1994 can be compared.

Average total expenditures are very close to equal between the two time periods. In 1994, Generation X spends a larger portion of total expenditures on housing, apparel, transportation and less on food, alcohol and tobacco than its 1980 counterpart. More specifically, Generation X spends about 12 percent less on total food, about 45 percent less on alcoholic beverages, and almost 50 percent less on tobacco and tobacco products, while spending close to 10 percent more on housing, 14 percent more on apparel, and about 8 percent more on transportation.

Future work will examine whether they are spending a larger share on housing and transportation because these items have become relatively more expensive and/or they are purchasing larger houses and vehicles which cost more, leaving less for other items.

The standardized 1994 average expenditures are very similar to actual 1994 averages. This shows that the 18-28 year old population of 1980 would exhibit a similar overall spending pattern to today's Generation X. If we had standardized the 1994 expenditures and found values closer to the 1980 figures, the result would support that the difference in spending was a related to characteristics changes in the 18-28 population.However this was not the case. Therefore we are uncertain about what is driving this difference. The standardization performed for this paper held more than one characteristic constant. Although it shows us what effect a changing population has on spending, it can't decipher the magnitude or direction of the effect each characteristic has individually. We could run this standardization for only one characteristic at a time to look at that effect.

Table 3
Average expenditures for consumer units with age of reference person 18-28, 1980, 1994, and 1994 standardized using 1980 distribution of consumer units

Expenditure Item	*1980 (1994 dollars)*	*1994*	*1994 Standardized*
Total expenditures	21,803	21,776	21,941
Total food expenditures	3,779	3,323	3,304
Food at home	2,598	2,381	2,377
Food away from home	1,195	942	927
Alcoholic beverages	606	340	[illegible]
Housing	6,397	6,907	6,956
Apparel	1,031	1,178	1,156
Transportation	4,685	5,052	5,112
New cars and trucks	666	1,065	1,068
Used cars and trucks	1,078	1,499	1,513
Entertainment	1,073	1,146	1,146
Tobacco	421	218	221

In summary, the data show that there is a small difference between how much on average Generation X and the 18-28 year olds of 1980 spend, but there is a difference on how those expenditures are budgeted. The standardization methodology used here also shows that the difference in how Generation X'ers spend their money compared to their 1980 counterparts does not appear to be a result of a change in the characteristics of that age group. The change is rather due to changes in other factors such as the economy faced by the group or tastes and preferences. In future research, regression analysis will be employed in a methodology similar to that used in the economics of discrimination to standardize and decompose the differences in spending by factors that may be related to them (Blinder, 1971).

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Endnotes

1. Economist, Division of Consumer Expenditure Surveys, Room 3985, 2 Massachusetts Avenue, NE, Washington, DC.
2. The Consumer Expenditure Survey surveys consumer units. The sample consists of consumer units in which the reference person is age 18-28. The sample excludes those members of the 18-28 year old population that are living with parents or those 18-28 year olds that live with another person considered the reference person.
3. Consumer Unit. A consumer unit comprises either: (1) all members of a particular household related by blood, marriage, adoption, or other legal arrangements; (2) a person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent; or (3) two or more persons living together who use their incomes to make joint expenditure decisions. To be considered financially independent, at least two of the three major expense categories housing, food and other living expenses, have to be provided entirely or in part by the respondent.

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Boom or Bust:
An Assessment of Consumer Spending by Region, 1984-85 and 1993-94

This is an abridged version of initial work on consumer spending patterns by Census defined region and division. Geographic variations in expenditures detected by this investigation will lay the foundation for a more detailed study. The views expressed herein are those of the author and do not reflect the policies of the Bureau of Labor Statistics (BLS) or the views of other BLS staff members

Wolf D. Weber, Bureau of Labor Statistics[1]

A recent article in the *Wall Street Journal* (Wysocki, 1996) began with the statement: "The past 15 years have brought a series of regional-rolling recessions: the oil-patch bust, the farm crisis, the Rust Belt woes ...." The author presents an argument that the economy has now become more stable and may avoid region-specific recessions. Are regional booms and busts gradually diminishing? Can a pattern of convergence in consumer spending be detected across regions? This study uses Consumer Expenditure Survey (CE) Interview data in an initial effort to answer these questions.

Preliminary results reveal that between 1984-85 and 1993-94 there is still much variation in the income and spending among Census divisions.[2] According to CE data, real[3] average annual income[4] increased seven percent for the U.S. while real expenditures declined slightly. Table 1 shows the percent changes in average annual total expenditures by Census division.

Table 1
Real Avg. Expenditure Changes, by Division, 1984-85 to 1993-94

Mountain + 13.3%
New England + 7.8%
West North Central + 2.4%
South Atlantic +1 %
Pacific - 0.8%
Middle Atlantic - 1.3%
East South Central -1.4%
East North Central - 1.8%
West South Central -14%

Background

After World War Two, rapid increases in economic activity took place in the southern and western regions of the U.S. The Northeast and Midwest experienced relatively small population growth as the result of net out migration, while the West and South grew rapidly due to influx from the northern regions and to natural population increases. Steadily increasing product demand allowed larger industrial entities to rapidly accumulate capital, while technology allowed them to spatially separate their activities. Decentralization of corporate functions reinforced the migration of production operations to manufacturing centers in the "sunbelt". The U.S. economy seemed to follow the patterns of neoclassical convergence theories into the 1970's, as capital flowed into areas that provided the best returns. Differences in regional and sub-regional per capita income began to shrink as the U.S. center of population moved south and west (Malecki, 1991).

Table 2
Consumer Unit Percent Distribution, 1984-85 and 1993-94

Region	1984-85	1993-94
Northeast	21.9%	20.3%
Midwest	26.5	25.2
South	32.9	33.9
West	18.7	20.7

Table 2 shows that the changes in the distribution of the U.S. population continue to mirror those of the recent past. In order to analyze the relative spending patterns of the regions, a look at educational attainment in conjunction with expenditures is warranted.

The Data

The data presented here are from the interview portion of the Consumer Expenditure Survey. Two samples that span a time period of ten years are used in the study. Consumer units[5] (CUs) interviewed between January 1984 and December 1985, and between January 1993 and December1994 are included in the analysis. The CE Interview Survey collects data quarterly from about 5,000 consumer units on a rotating panel basis. Each quarter 20 percent of the sample population is dropped from the survey and a new 20 percent is added. CUs selected to participate in the survey do so for up

Table 3

Selected Characteristics by Region, Division, and for All Consumer Units,1984-85 CE Data

Item	All Regions	Northeast Region	New England	Middle Atlantic	Midwest Region	East North Central	West North Central
Sample size	41,405	8,728	2,512	6,216	11,030	7,287	3,836
Number of CUs (in 000's)	90,510	19,836	6,418	13,419	23,958	17,302	7,066
Age of reference person	46.7	48.2	46.8	48.9	47.3	47.0	48.1
Annual income before taxes[1]	$24,041	$24,578	$23,710	$24,973	$23,029	$24,416	$20,226
Average total expenditures[1]	22,146	21,959	22,946	21,510	21,215	22,609	18,387
Percent distribution:							
Education of reference person							
Less than high school diploma	27.8	26.8	17.9	31.0	26.1	25.3	27.5
High school grad or some college	50.0	50.8	54.0	49.2	54.0	54.3	53.8
College graduate	22.2	22.5	28.1	19.8	19.9	20.4	18.7
Occupation of reference person							
Wage and Salary	66.9	64.6	67.2	63.5	65.0	[illegible]	63.4
Professional, managerial, supervisor	24.5	25.0	30.8	22.3	22.4	[illegible]	21.5
Technical, sales, clerical	14.3	13.8	12.5	14.5	13.2	13.3	13.2
Service	7.5	8.1	7.6	8.3	6.4	[illegible]	7.4
Blue collar and other	20.6	17.7	16.3	18.4	23.0	23.9	21.3
Self employed	6.7	5.8	6.6	5.5	7.9	7.7	8.2
Retired	16.2	19.0	19.1	19.0	16.6	15.6	18.2
Out of labor force (includes unemployed)	10.3	10.5	7.3	12.0	10.5	10.5	10.2

Table 3 (cont.)

Item	South Region	South Atlantic	ES Central	WS Central	West Region	Mountain	Pacific
Sample size	12,205	7,188	1,738	3,186	9,442	2,019	7,423
Number of CUs (in 000's)	29,779	17,011	4,945	7,412	16,937	3,950	12,987
Age of reference person	46.4	47.0	47.2	44.3	44.7	43.0	45
Annual income before taxes[1]	$23,494	$23,125	$22,856	$24,348	$25,810	$20,958	$27,312
Average total expenditures[1]	21,780	21,280	20,581	23,342	24,259	20,206	25,514
Percent distribution							
Education of reference person							
Less than high school diploma	33.3	33.4	32.8	34.3	21.7	20.8	22.0
High school grad or some college	44.8	44.0	47.5	43.7	52.7	53.9	52.3
College graduate	21.9	22.6	19.6	22.0	25.6	25.3	25.7
Occupation of reference person							
Wage and Salary	68.2	66.1	68.8	72.0	70.1	69.7	70.2
Professional, managerial, supervisor	25.2	25.5	22.7	25.7	25.6	24.7	25.9
Technical, sales, clerical	14.4	13.2	16.4	15.8	16.4	13.4	17.2
Service	7.3	8.2	7.0	5.8	8.5	10.6	7.9
Blue collar and other	21.3	19.2	22.7	24.7	19.6	21.0	19.2
Self employed	6.2	5.6	5.8	7.8	6.8	6.1	7.0
Retired	15.3	18.2	12.8	11.0	13.7	14.0	13.6
Out of labor force (includes unemployed)	10.4	10.3	12.7	9.2	9.5	10.2	9.3

Note: Numbers may not add up to 100 percent due to rounding.

[1] Complete income reporters only.

to five consecutive quarters. Data collected in each quarter are considered independent so that the estimates are not dependent on consumer units participating in the survey for all five quarters. The Interview Survey captures about 95 percent of spending by American households.

The total sample size for this study is 82,797 interviews (41,405 in the 1984-85 group and 41,392 in the 1993-94 group), which when weighted to reflect the population, represent about 90.5 million CUs in 1984-85 and about 100.8 million CUs in 1984-85. In addition to collecting expenditure data, the CE Survey gathers information on respondent characteristics including age,education, and occupation of reference person[6], and CU income, family composition, and region of residence. Although the four Census regions are coded, a variable that sorts CUs by the nine level Census division does not exist. In order to delineate the sample to the division level, CUs were summed by state of residence in accordance with the definitions of the nine Census divisions.

Table 4

Selected Characteristics by Region, Division, and for All Consumer Units,1993-94 CE Data

Item	All Regions	Northeast Region	New England	Middle Atlantic	Midwest Region	East North Central	West North Central
Sample size	41,392	8,744	2,190	6,550	10,964	7,312	3,652
Number of CUs (in 000's)	100,837	20,432	5,411	15,006	25,394	17,420	7,975
Age of reference person	47.8	49.1	47.1	49.9	47.7	48.5	45.9
Annual income before taxes[1]	$35,492	$37,876	$42,998	$36,002	$33,493	$35,162	$30,333
Average total expenditures[1]	30,666	31,599	34,433	30,456	28,422	29,913	25,600
Percent distribution:							
Education of reference person							
Less than high school diploma	21.4	19.6	13.8	21.7	20.5	21.1	19.4
High school grad or some college	54.9	55.8	52.3	57.0	58.3	58.0	59.1
College graduate	23.7	24.7	33.9	21.3	21.1	20.9	21.6
Occupation of reference person							
Wage and Salary	65.0	61.2	67.7	58.8	66.1	65.7	67.0
Professional, managerial, supervisor	21.7	22.0	29.4	19.4	20.5	20.6	20.4
Technical, sales, clerical	16.1	16.2	17.5	15.6	15.2	14.5	16.7
Service	8.0	8.0	6.7	8.5	7.7	7.2	8.8
Blue collar and other	19.2	15.0	14.1	15.3	22.7	23.4	21.1
Self employed	6.5	5.2	5.2	5.1	6.5	6.3	7.0
Retired	17.9	21.0	16.8	22.5	18.1	18.7	17.0
Out of labor force (includes unemployed)	10.7	12.7	10.4	13.5	9.3	9.1	9.1

Table 4 (cont.)

Item	South Region	South Atlantic	East South Central	West South Central	West Region	Mountain	Pacific
Sample size	12,479	6,467	1,682	4,334	9,205	2,397	6,808
Number of CUs (in 000's)	34,156	15,669	6,533	11,968	20,855	5,736	15,119
Age of reference person	47.7	46.5	48.8	48.5	46.7	45.3	47
Annual income before taxes[1]	$32,802	$36,327	$29,669	$29,737	$39,565	$36,386	$40,786
Average total expenditures[1]	29,263	30,954	27,784	27,778	34,380	31,994	35,295
Percent distribution:							
Education of reference person							
Less than high school diploma	25.8	20.4	31.9	29.5	17.1	16.9	17.1
High school grad or some college	51.5	52.5	48.4	52.0	55.4	56.4	55.1
College graduate	22.7	27.0	19.7	18.5	27.5	26.8	27.8
Occupation of reference person							
Wage and Salary	64.9	79.4	64.9	60.9	67.0	74.1	64.4
Professional, managerial, supervisor	21.4	24.3	20.2	18.2	23.1	24.8	22.5
Technical, sales, clerical	16.0	19.2	11.7	14.4	17.3	18.8	16.7
Service	8.0	8.6	5.7	8.5	8.2	10.6	7.3
Blue collar and other	19.5	27.3	27.3	19.8	18.4	19.9	17.9
Self employed	6.2	5.0	6.6	7.4	8.3	6.4	9.0
Retired	17.4	16.1	16.4	19.6	15.3	12.9	16.2
Out of labor force (includes unemployed)	11.5	10.7	12.2	12.2	9.5	6.7	10.5

Note: Numbers may not add up to 100 percent due to rounding.

[1] Complete income reporters only.

Demographics and Characteristics

Tables 3 and 4 present selected descriptive data for the years 1984-85 and 1993-94 on the characteristics of CUs by Census region and division. The U.S. consumer unit population grew by more than 10 million over the time period. As noted previously, however, it did so asymmetrically across region and division. In general, families grew older and smaller over the ten year period. Only in the Mountain division did the number of CU members increase, growing from 2.5 persons per unit in the earlier period to 2.8 in 1993-94. While average annual income for all divisions combined increased by over $10,000 per CU, (48 percent), divisional increases show strong variation.

Educational Distributions

The national distribution of the educational attainment of reference persons shows a slight increase in the college graduate group and a greater increase in the high school graduate-some college group from 1984-

85 to 1993-94. Regional differences are fairly pronounced with the South lagging behind in educational attainment, especially in the earlier time period. Although with about one third of the South's reference persons without a high school diploma in the 1984-85 period, its real income distribution for that period is very similar to the distribution for the other regions[7]. It appears that in the later period, education is more closely related to income. As New England increased its percent of college graduates from 28 to 34 percent, its earners in the fifth income quintile increased from about 18 to 27 percent. Only in the West South Central region was the percent of CUs with college grads lower in 1993-94 (18.5 percent) than in 1984-85 (22.0 percent). Its proportion of top quintile earners also dropped, from 21 to 16 percent.

Occupational Distributions

The greatest overall change in the occupational mix of CUs' reference persons during the period is the decrease in professional, managerial, and supervisor (white collar) positions and the increase in technical, sales, and clerical positions. During the 1993-94 period, New England's workforce had the largest percentage of professional, managerial, and supervisor positions (almost 30 percent). The most drastic decline in the white collar work force took place in the West South Central division where the proportion fell from 26 percent in 1984-85 to 18 percent in 1993-94. The proportion of the blue collar work force dropped in all divisions except the South Atlantic (up from 19 percent to 27 percent) and the East South Central (up from 23 percent to 27 percent). The rise in the proportion of the blue collar work force in these divisions may reflect the continued flow of manufacturing operations into the South.

An indication of the economic health of the divisions may be gained by looking at the proportion of CUs' reference persons that are out of the labor force. Masked behind a one-half percent increase for the nation as a whole, over the ten year period, are more volatile movements at the division level. Of the nine divisions, five experienced increases and four decreases in the percent of reference persons that are out of the work force.[8] Some of these differences are substantial. The Mountain division showed the largest decrease, with CUs of this status falling from 10.2 percent to 6.7 percent over the ten year period, while the West South Central and New England divisions each showed increases of about 3 percent. Over one third of the reference persons in the Middle Atlantic division were either out of the labor force (13.5 percent) or retired (22.5 percent) in the 1993-94 period.

Expenditures Shares

Expenditure Categories

Table 5 shows expenditure shares that are derived from selected expenditure means. The first three expenditure categories presented in the tables are defined to contain only the "necessary" elements of food, housing, and transportation spending. The recreation and related expenditures category is compiled to include spending on items or services that may be deemed luxuries. This includes all entertainment expenditures as well as other lodging (vacation homes), transportation for trips (vacations), and food away from home (meals at restaurants). The goal of itemizing categories in this manner is to analyze consumer expenditure behavior with respect to perceived necessities and luxuries.

Expenditure Shares Analyzed

Expenditure shares greatly reduce geographical and temporal price level differences, thus affording the researcher a simple tool that can be used for comparative purposes. It generally holds true that as income or total expenditures increase, the proportion of spending on necessities falls while that for luxuries rises. With this maxim in mind, an analysis of expenditure shares follows under the general assumption that movements in a division's shares over the ten year period may indicate changes in the economic health of that division.

The expenditure shares allocated to food at home, perhaps the greatest necessity, are fairly stable across regions and divisions. The Pacific division devoted the smallest share of total spending to this category in the 1984-85 period. It also spent the smallest proportion of total expenditures on health care and the largest on recreational goods and services during this period. By 1993-94 however, the Pacific division's expenditure shares allocated to necessities rose and those devoted to luxuries declined. The Middle Atlantic division had the highest food at home shares over both time periods and by the 1993-94 period its recreation share dropped to the second smallest among divisions. Only the West South Central division spent a smaller proportion of total expenditures on recreational goods and services during the 1993-94 time period. The greatest intra-regional differences are found in the Northeast, with New England having relatively lower shares for necessities and higher shares for luxuries than the Middle Atlantic, especially by 1993-94. The expenditure share for housing in the Middle Atlantic division rose by more than five percent from 1984-85 to 1993-94. Over the ten year period, the West South Central division recorded the greatest increase in food at

Table 5

Expenditure Shares, by Region and Division 1984-85 and 1993-94 CE Data

Item	All Regions	Northeast Region	New England	Middle Atlantic	Midwest Region	East North Central	West North Central
Total expenditures 1984-85	$21,802	$21,253	$21,793	$20,994	$21,023	$22,309	$18,310
Total expenditures 1993-94	$30,068	$30,908	$33,836	$29,840	$28,228	$29,564	$25,312
Percent of total expenditures:							
Food at home 1984-85	10.7%	11.7%	10.9%	12.1%	10.6%	10.6%	10.8%
Food at home 1993-94	10.8	11.5	10.1	12.2	10.5	10.4	10.7
Housing (less other lodging) 1984-85	29.2	29.0	30.6	28.3	28.8	28.8	29.0
Housing (less other lodging) 1993-94	30.8	33.3	32.6	33.5	29.3	29.5	28.8
Transportation (less trips)1984-85	19.1	17.5	18.0	17.3	19.3	18.8	20.2
Transportation (less trips)1993-94	17.7	14.7	15.7	14.4	19.2	19.6	18.2
Apparel and services 1984-85	5.1	5.5	5.4	5.6	5.0	5.2	4.7
Apparel and services 1993-94	4.4	4.7	4.4	4.3	4.4	4.4	4.4
Health care 1984-85	4.6	4.2	4.2	4.2	4.6	4.3	5.5
Health care 1993-94	5.5	5.2	4.7	5.3	5.6	5.5	5.8
Recreation and related 1984-85	15.4	16.0	16.1	15.9	15.5	16.0	14.0
Recreation and related 1993-94	14.8	15.1	16.1	14.7	14.9	15.0	14.9
Other expenditures 1984-85	15.1	15.1	14.0	15.7	15.2	15.4	15.2
Other expenditures 1993-94	15.9	15.5	16.4	15.2	16.0	15.6	17.1

Table 5 (cont.)

Item	South Region	South Atlantic	East South Central	West South Central	West Region	Mountain	Pacific
Total expenditures 1984-85	$21,557	$21,131	$20,367	$22,944	$23,980	$19,948	$25,206
Total expenditures 1993-94	$28,524	$30,476	$27,176	$26,720	$34,012	$31,576	$34,936
Percent of total expenditures:							
Food at home 1984-85	10.5%	10.6%	10.7%	10.1%	10.1%	10.5%	09.9%
Food at home 1993-94	10.8	10.2	10.5	11.9	10.5	10.4	10.6
Housing (less other lodging) 1984-85	28.8	29.2	27.9	28.0	30.4	27.4	31.1
Housing (less other lodging) 1993-94	29.4	31.3	26.6	28.0	32.1	29.4	33.0
Transportation (less trips)1984-85	20.1	20.3	20.5	19.7	18.9	21.0	18.4
Transportation (less trips)1993-94	19.1	18.3	18.7	20.3	17.2	19.1	16.5
Apparel and services 1984-85	5.1	4.6	5.3	5.9	4.9	4.5	5.0
Apparel and services 1993-94	4.4	4.1	5.2	4.3	4.1	4.1	4.2
Health care 1984-85	5.2	5.1	5.3	5.2	4.0	4.3	3.9
Health care 1993-94	6.3	5.4	7.2	7.1	4.8	6.1	4.3
Recreation and related 1984-85	14.5	14.6	13.6	14.7	16.0	15.2	16.2
Recreation and related 1993-94	14.4	14.7	15.8	13.0	15.1	15.1	15.1
Other expenditures 1984-85	15.1	14.6	15.7	15.5	14.9	16.3	14.5
Other expenditures 1993-94	14.8	15.9	15.9	15.3	16.3	15.9	16.4

home shares (up by about 2 percent) and the largest decrease in the recreation category share (down from 16 percent to 13 percent). Health care shares increased for all divisions, but much more so for both South Central divisions and for the Mountain West.

Conclusion

This preliminary investigation of consumer unit spending by geographic region and division indicates that there are differences in spending patterns across and within regions, both in 1984-85 and in 1993-94. These differences in spending patterns did not diminish over the ten year period, but seem to have increased. As shown in Table 6, the difference in the ratio of regional average total expenditures to the national average increased for two of the regions over the ten year period.

Changes in real average total expenditures over the period varied from negative 14 percent to positive 13 percent, while divisional differentials in expenditure shares increased slightly overall. As the gap in food at home shares across regions narrowed slightly (by 0.1 percent), the differences in recreation and related shares grew wider (from 2.6 percent to 3.1 percent). The differences in health care and housing shares also increased from the 1984-85 to 1993-94 period.

More research is required in order to specify the underlying causes of geographic differences in expenditures. The construction of divisional price deflators will help in pinning down inter-divisional spending variations. Other factors that need to be accounted for in linking expenditure patterns and

Table 6

Ratios of Regional-National Avg Total Expenditures.

	1984-84	1993-94
Northeast	0.97	0.98
Midwest	0.97	0.97
South	0.99	0.97
West	1.10	1.12

geographic divisions are local labor market conditions and consumer unit demographics and characteristics. These elements are presumed to play important roles in consumer expenditure behavior and need to be isolated and held constant in order to help classify regional differences in spending patterns.

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Endnotes

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2. Census Regions and Divisions are:
   Northeast:
   New England-ME NH VT MA RI CT
   Middle Atlantic-NY NJ PA
   Midwest:
   East North Central-OH IN IL MI WI
   West North Central-IL MN IA MO ND SD NE KS
   South:
   South Atlantic-DE MD VA WV NC SC GA FL DC
   East South Central-KY TN AL MS
   West South Central-AR LA OK TX
   West:
   Mountain-MT ID WY CO NM AZ UT NV
   Pacific-WA OR CA AK HI
3. Income and expenditure figures that are presented in real terms have been deflated by the regional CPI-U (1982-84=100). Deflators at the intra-regional level of detail were not available, therefore all of the divisions of a region are deflated by the regional index.
4. Income data are for complete income reporters only - those respondents that provide values for at least one major source of income.
5. The basic unit of comparison for the CE. A consumer unit is defined as a single person living alone or sharing a household with others, but who is financially independent; members of a household related by blood, marriage, adoption, or other legal arrangement; or two or more persons living together who share responsibility for at least 2 out of 3 major expenses.
6. The first person mentioned when the respondent is asked to "Start with the name of the person or one of the persons who owns or rents this home."
7. Real income distributions are not presented here. They are included in the unabridged version, which is available by request.
8. Reference persons not in the labor force are defined as those that are: not able to find work (unemployed), working without pay, disabled, taking care of home family, going to school, or doing something else.

Cyberspace: The Potential for Consumers

Producers and consumers increasingly view cyberspace as a source of information, a place to advertise and/or purchase goods and services, and a means of communication. This presentation looked at some of the resources available to consumers and families in cyberspace, and the difficulty of accessing and evaluating the resources.

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Cyberspace is a term that currently replaces terms such as electronic super highway or information highway in the media. It is used to describe a computerized information system that can deliver limitless streams of information. The world wide computer network makes vast amounts of information accessible through the Internet or World Wide Web.

How Does the Consumer Get There?

Access to computer based information is available through commercial on-line services and through the Internet. The Internet is a world wide system linking university, government, and commercial computers. The Internet is free to individual users as it is supported by the many institutions involved (Tetzelli, 1994). Internet and commercial services differ in some types of services and information provided. There are about 2000 Web sites offering almost any product or information on any topic (Fishman, 1996). Whatever the consumer wants to know about is probably there, but how is it found? Web browsers such as Netscape help to navigate the World Wide Web. Other search tools are Yahoo, Lycos and Alta Vista (Swartz, 1996).

Who Goes There?

In 1995 about 9.5 million Americans used the Internet according AIS (The American Internet Survey) (Find/SVP, 1995). The Internet Demographics Survey by Nielsen Media Research reported that there are about 24 million people in the U. S. and Canada cruising the net (Rothenburg, 1996). Exact numbers of users are difficult to determine as people belong to more than one on-line service and how internet user is defined can differ (Arthur, 1995). The AIS definition of an Internet user is limited to uses other than e-mail. Cyberspace users are more likely to be male (about 64%), under age 44, with incomes of $25,000 or more. About half of those cruising the Internet were on for first time in 1995 according to the AIS, and the average time on-line is 6.6 hours per week. Projections for 1996 are that about 15.7 million persons, or 12% of the American population will be accessing cyberspace.

What Do They Do There?

The Internet is used to communicate, shop for goods and services, and seek information. Electronic mail is used to communicate because it is less expensive than long distance phone calls, can be done at each party's convenience, provides a visual record of what is said, and offers opportunity for quick response. Listservs, bulletin boards, and discussion groups let consumers be in touch with others who share similar interests. In chat rooms, consumers can meet new people and exchange information and ideas.

Consumers also shop for goods and services. In the article 'Three Days in Cyberspace', the author recounts his assignment to interact with the outside world only by computer for three days. He found problems with getting food, grooming articles, and clothing. He could 'chat', e-mail home, and trace a Fed Ex letter (Whitford, 1995). In fact, he ended up e-mailing a friend to telephone and have a pizza delivered. The consumer can order airline tickets, send flowers, buy stocks and other financial products, mail order from Land's End, purchase computer software and hardware, shop at an on-line bookstore, or send personalized greeting cards (Guise, 1996; Kratzer & Folk, 1995). On a *trip* to The Branch Mall (http://branch.com) sites selling flowers, tea, t-shirts, ties, eye glasses and many other items were found. Currently there is a lack of variety of items available, but the number of sites in selected areas is increasing. In some places one can order groceries on-line, but that kind of availability is still pretty limited. Many of the items found at on-line sites were more expensive than local stores, but offered

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the convenience of not having to leave home.

From the Financenter Home Page (http://www.financenter.com/index.html) loan rates on automobile and home purchases, and loan applications were available. Although the internet and on-line services have attracted hundreds of companies anxious to set up shop, many consumers do not yet trust the idea of ordering products and paying bills on-line. Concerns include wanting to deal with someone they know and the fear that sensitive financial information will fall into the wrong hands.

Most of the people on the Internet are not buying or selling but are trading information that's useful in their everyday lives, such as searching for old friends and relatives, organizing events, hiring employees, and swapping advice on investments (Rigdon, 1996). Educational organizations use the internet to organize classes, communicate with home bound students, and collect homework. Information on almost any topic is available from industry, government, educational sources. For instance, the Federal Trade Commission ConsumerLine (http:/www.ftc.gov/index.html) offers full text of approximately 150 consumer and business publications on topics such as credit, investments, health and fitness, telemarketing, homes and real estate, products and services, and automobiles. Health and wellness information is available from a variety of sources such as The National Cancer Institute (http://www.nci.nih.gov/) and one source of nutrition information is The International Food Information Council (http://ificinfo.health.org/homepage.htm).

Almost anything you want is there if you can sift through the many sites to find it. It continues to be a time consuming process and the information and quality of goods an services must still be evaluated by the user. Access varies widely by locality. While in the town of Blacksburg, VA, 40% of the households are connected to the Internet, that is not the norm. It also is important to keep in mind that if 12% of the population has access, that means that 88% of the population does not have access to these resources.

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Endnotes

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Cyberspace: Consumer Protection Issues

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The explosive growth in cyberspace has led to new challenges for consumer protection. Cyberspace used mean the relatively orderly and monitored information available through online services such as CompuServe, America Online, and Prodigy. Today, however, direct access to the Internet, especially the Worldwide Web, has reduced the role of online services (Eng, 1996; Sandberg & Ziegler, 1996). With online services, there was the potential of holding the provider responsible for consumer protection problems, as one might attempt to hold a television network or magazine responsible for the deceptions of advertisers. The Internet is basically anarchy, however, with the number of web pages over 25 million, and a projected 30 million consumers having access by 1998 (Ziegler, 1996).

Commerce is growing in cyberspace, especially as methods are developed to make credit card transactions reasonably safe (Rupley, 1996). There is still some controversy about how safe transactions are (Sandberg, 1996) but the majority opinion seems to be that the major credit card companies have developed methods that are at least as safe as handing a waiter your credit card in a restaurant (Holland, 1996).

Cyberspace is such a new medium that government regulation has not kept pace with it, although there has been a start (Salt Lake City Tribune, 1996). In the United States the growth of cyberspace comes at a time when there are budgetary and ideological pressures to reduce government regulation. Cyberspace is also a borderless phenomena. A Commissioner of the U.S. Federal Trade Commission pointed out that "(T)echnological advances in telecommunications and finance allow scam artists in one country to communicate easily with victims in another country and to transfer their ill-gotten gains from one country to another." (Starek, 1995). It will be very difficult for governments to regulate commerce in cyberspace.

What role should the government play in consumer protection in cyberspace? Are market remedies against misrepresentation adequate (e.g., Posner, 1992, p. 110)? If consumers are informed, or if repeat sales are important, market forces may tend to correct problems for consumers. However, consumer dealings with anonymous cyberspace merchants may not fit Posner's prescription for laissez-faire.

What are the causes of consumer protection problems. Ignorance is an obvious candidate for a source of consumer protection problems. However, if a consumer is ignorant but skeptical, damage may be limited. Various human weaknesses, including greed, desire for a cure, and lust can lead to many types of consumer protection problems.

Cyberspace offers many opportunities for investors (Hannon, 1996; Rupley, 1995) although there are still information gaps (Middleton, 1996) and outright deceptions (Weiss, 1995). One problem with investing fraud is that it might take a long time for an investor to discover that there is a problem. For investors in the United States, all of the regulations of the Securities and Exchange Commission should apply, but there is obviously a difference between trying to recover funds from your local stock broker and some cyberspace boiler room operator. The general problem predates cyberspace by many years, perhaps dating back to when long distance telephone calls became relatively cheap. Investors may ignore common sense because of their own greed to beat the market. Consumer education may provide some help. Even though there is still some controversy about the Efficient Market Theory (Malkiel, 1995), stress of that concept may inoculate some investors against either an attractive looking web page offer or a smooth talking swindler on a cold call.

There are a large number of medical web sites and Usenet groups in Cyberspace, many of which are worthwhile. However, there are also a large number of dubious web sites. For instance, one company in the Ukraine offered a magnetic device that is said to cure sexual dysfunctions and various other ills. The consumer merely needed to send $99 by Western Union to the address listed. The advantage of cyberspace over 800 numbers for such orders is that working knowledge of written English is much wider than fluency in spoken English. Therefore, scam artists can operate from any country that has Internet connections.

Every type of pornography is available on the Web, and although there are still free samples and some offerings by amateur exhibitionists, credit card payments and international "900" numbers are the popular methods of restricting access. There have been some problems reported with the international "900" numbers, with bills of hundreds of dollars possible for a relatively short call. Pornography in cyberspace is the ultimate form of borderless commerce. No physical shipment of goods is necessary, as even movies can be transmitted over the Internet. The potential for government sponsored consumer protection for consumers of pornography is probably very limited in any case, as many consumers would not want any publicity and would prefer to suffer in silence even if ripped off for hundreds of dollars. Credit card company offer the potential for dealing with deceptive marketing.

Government agencies obviously have a role to play, and are slowly starting to pay attention to the cyberspace phenomena (Yang, 1996). Government has only limited resources to police cyberspace. With the number of web sites approaching one million, consumer protection is very difficult. For some consumer problems in the U.S., such as product safety, civil actions, such as medical malpractice and product liability cases can help reduce the extent of consumer problems in the long run. Civil actions are not likely to be effective against the international and/or fly-by-night nature of cyberspace commerce.

Given that most cyberspace commerce is conducted through credit cards, it may be that credit card companies will provide the greatest assistance to consumers. It is no accident that Mastercard is one of the sponsors of the Web Page for the National Fraud Information Cente:, which solicits complaints about cyberspace fraud. If the major credit card companies would act against merchants who cheat consumers, there would be a powerful force against fraud in cyberspace.

The main way that consumers find commercial sites is through using a search engine or index. For instance, under *Yahoo!*, one can either search, or use its index of topics. One can quickly get to providers of dubious medical cures through the *Yahoo!* index. If judges found that search engines had some legal liability for fraudulent commercial services, or such liability were legislated, some consumer protection might be provided.

Cyberspace is changing so rapidly that it is difficult to project the future more than a few months in advance. International agreements are needed, and the application of existing laws against fraud to Cyberspace must be clarified. It is possible that Internet providers could be held responsible for deceptive marketing, just as the 1996 Telecommunications Act is attempting to hold them responsible for pornography. However, consumer education and private industry initiatives may provide the most protection.

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Endnotes

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Consumers and Cyberspace: Inequitable Distribution of Information

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Although the quality of information available on the Internet has been questioned, cyberspace has truly opened an information highway. However, even if the marginal cost of obtaining information is relatively low, the initial direct costs for getting on-line can prevent access for many consumers. Access to the Internet is a function of the ability to afford hardware and software as well as the indirect cost of time to learn a system. In addition, for some, technophobia, defined as the fear of new technology or using new technology, can reduce the likelihood that access to the information highway will be achieved.

Consumers most prone to technophobia are relatively older, have negative attitudes towards computers in general, have had little exposure to them, are female, and are in relatively lower socio-economic classes than consumers who are more comfortable using computers. Increased exposure to computers tends to reduce computer anxiety and aspects of technophobia. Hence, a counter argument can be made that if one is prone to technophoba and does not have access to computers, the likelihood of overcoming technophobia and gaining access to the information highway is slim.

Even if the direct costs of gaining access to the information highway are coming down, the indirect cost of access, measured by some degree of technophobia, will prevent access to certain groups, creating a cycle of information poverty. National data reveal that the poorest students have the least access to computers at home. Minority students are also least likely to have access to computers at home. Income and computer usage are also negatively related. Hence, those without access are least likely to gain access.

Other research on technophobia measure attitudes toward a variety of new technologies, including voice mail, FAX machines, and the like. This research focuses on the uses of personal computers and whether they are in fact accessing the information highway. Sample consists of parents of 5th graders and measures their attitudes and usage of computers, along with various demographic characteristics. Preliminary results indicate that even for those who use computers at work or at home, usage is primarily for word processing and games, with very little usage of the Internet, even for e-mail.

The purpose of this research is to determine the extent to which technophobia may exist. This study also measures the specific ways in which households who have home computers make use of them; whether they are simply modern typewriters or an entry into cyberspace and consumer information. National statistics for 1993 reveal that the highest percentage of computer usage by students at school occurs in grades 1 through 8; 69%. However, with the exception of Kindergardeners, the lowest percentage of students using computers at home, 25%, were also in grades 1 through 8. Given the possible lack of reinforcement of computer exposure from school in the home, it was thought that a potential group of technophobic parents might exist, or at least the characteristics of such a group could be identified. Further, most other research on technophobia has focused on college students and the relationship between computer anxiety and academic performance. Some research has focused on the elderly in general, or on relatively older professionals in primary labor markets.

Little research has measured the degree to which those of prime working age across a variety of socio-economic levels may be affected. Assuming that the parents of fifth graders, for the most part, are of prime working age, the sample was selected. There are five elementary schools within the sample district. To measure the extent to which these parents might be technophobic, a series of attitudes questions were asked using a typical Likert scale ranging from 1 for strongly agree to 5 for strongly disagree. The specific statements used in the questionnaire were adapted from studies designed to measure computer attitudes and/or computer anxiety (references available from author on request). Statements were selected based on their validity and appropriateness for this study.

Results

The response rate for School A was 66.%, and for School B was 75.3%, with a total of 197 surveys returned. There were 94 males and 103 females. The majority of these parents were employed (87%), and all were between the ages of 27 and 59, with the highest percentage (49%) between the ages of 35 and 41. Of the 183 respondents who responded to the household income question, 58% had total household incomes over $60,000. Hence, the majority of the sample were relatively well educated, high income, and were employed in the primary labor market.

Over 78% of the respondents indicated that there was a computer in their household. Most of these home computers (60%) first appeared in the household when the fifth grader was between the ages of 7 and 12. Fifth graders are usually aged 10 or 11, hence, the computers were purchased within the last few years. Asked whether they used any computer on a fairly regular basis, over 74% of the respondents indicated that they did. Of these, 63% used a computer fairly regularly both at home and at work, whereas only 20% of the computer users only used them at work. Most had been using computers between 6 and 10 years (29%) followed by those who had been using computers between 11 and 15 years (23%). Hence, the sample consisted mainly of experienced, regular computer users, both at home and at work.

When asked how they learned to use the computers at work, 50% of the parents were formally trained through on the job training programs or in formal classes. When asked what they primarily used computers for at work, the highest percentage of usage was for word processing (42%). When asked about all the tasks they used computers for at work, 80% used them for word processing, 54% for e-mail, but only 19% for Internet information searches. Sixty-five percent used them at work for spread sheets or budgets, 23% used them at work to play games, and 14% used them for CAD.

When asked how they learned to use their computers at home, most of the parents (52%) indicated that they taught themselves through trial and error or using the written material that accompanied their computers and software. The survey did not ask whether their first exposure to computers was at home or at work, which may explain the willingness of home users to experiment on their own. However, only 24% of the respondents who used a home computer fairly regularly, indicated that they learned to do so from their experiences at work. When asked what they primarily used their home computers for, most did word processing (58%). When asked about all the tasks they used their home computer for, 86% used them for word processing, 31% for email, 34% for Internet information searches, 51% for spread sheets or budgets, and 83% for games.

Of the 17 statements designed to measure attitudes towards computers, 10 were used to determine whether a respondent would be classified as being technophobic. in general, a higher percentage of technophobics tend to be female rather than male; have slightly less formal education and lower household incomes than those of the entire sample;. do not use computers as regularly as others; and have little experience using them. These findings support the notion that the income distribution may in fact widen if those with less access to computers continue to be left behind because of the direct costs of getting started or because of the implicit costs technophobia can create. As such, it may be wise to promote programs and/or policies to increase the exposure of computers in sectors of the population that would most likely not have access to them through work or other contacts.

It was also shown that Internet usage, regardless of technophobic tendencies, is not very widespread. Of those who do use the Internet, usage is higher at work for those who are comfortable with computers, whereas Internet usage is higher at home for those who are unsure about their computer attitudes. Most of the users of the Internet both at home and at work are employed in professional or managerial occupations, are relatively well educated and high income. Internet users at work are slightly older than Internet users at home, and have more computer experience. A higher percentage of Internet users at work are female whereas a higher percentage of Internet users at home are male.

This data set will be further analyzed using multivariate techniques to determine (1) characteristics of persons that would increase the likelihood of their being technophobic, and (2) factors that would increase the likelihood that someone would use the Internet. It is thought that in the estimation of factors influencing Internet usage, some measure of one's degree of technophobia should be included. Applying these models to a nationally representative sample of persons based on socio-economic characteristics would be preferable as results could be generalized to the population. Although data are available regarding the characteristics of Internet users, by definition, these data are not conducive to the measurement of technophobia.

Endnotes

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Consumer Interests Annual *Volume 42, 1996*

Use of the Alternative Financial Sector: Toward a Revisionist Hypothesis

The alternative financial sector (AFS) is made up of very expensive, non-traditional credit sources used by low-income consumers. This study explored the link between household income and AFS use. It was found that the heaviest users of the AFS are households who also face tremendously high implicit marginal tax rates from possible loss of public assistance. This suggests that the AFS may be used as a way to "shelter" unreported income.

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Introduction

Over this his past year, we have developed the idea that the various sources of short-term credit utilized by lower-income consumers constitute an *alternative financial sector* (AFS). The services included under that heading, are listed in Table 1. Although some of the elements of the AFS have been explored separately (*Rent* 1993; Caskey 1994), their collective impact had not been assessed. They belong together because all typically feature small transactions, quick access to funds and very high rates.

Table 1
The Alternative Financial Sector: Summary[b]

Service	Cost[a]
Rent-to-Own	APR 250-350%; higher for weekly rental
Pawn Shops	Average APR above 200% higher in some states;
Car Title Pawn	APR approximately 300%
Refund Anticipation Loans	APR 77-204%
Check Cashing	2-10% in regulated states; informal rates higher.
Post-Dated Checks	APR 325-610%
Money Orders	Varies, but minimal

[a] All figures are illustrative; rates are highly sensitive to assumptions about amount and length of loan.
[b] Source: Swagler, Burton & Lewis 1995a.

We also demonstrated that the high rates illustrated in Table 1 could cripple the budget of a low-income family (Swagler, Burton & Lewis 1995b). The key word in the last sentence is *could*; the contention must be conditional because the actual impact of fees paid to the AFS depends on the level of use. Even moderate use levels would be debilitating, but if the AFS is used only on an occasional basis, the impact on the household's finances would be less significant.

A more definitive conclusion requires data on how households actually use the AFS. To that end, we began the development of the necessary survey instrument. At the same time, we dealt with the question of the proper survey population. The AFS is usually discussed with reference to "low-income consumers," but the term is not defined. Yet the precise definition is critically important in terms of both the cost and usefulness of the data.

This paper, reports the results of our efforts to define the population of AFS users. What began as a largely technical exercise uncovered information which may alter our investigation and has potential public-policy implications extending well beyond the AFS.

The Income Criterion

There are various ways to structure the sample of low-income households. One would be to include only AFS users, with non-users grouped in a second sample. That, however, raises the possibility of oversampling and would not provide information on the *proportion* of the low-income population using the AFS. The alternative would be to include all households in certain income groups. The sample should then cover the whole spectrum of AFS use, from households who have not used alternative services at all, to those who have used a variety of services on a regular basis.

The problem with the latter approach is ensuring that the sample includes adequate numbers of AFS users. Because the actual proportion of users is unknown, contacting low-income households randomly might result in too few AFS users for statistical analysis.

Thus, it is essential to sample from a population of likely AFS users. The question then becomes: at what income level does AFS use become more prevalent? Our working hypotheses was that there is an inverse relationship between income and use of the AFS, with higher usage rates associated with lower income level. However, neither the precise form of the relationship nor the income level at which use accelerates could be specified beforehand. There was reason to believe, however, that the latter was below the median income for all households.

The Income-Use Survey

A preliminary survey was carried out to provide information about income-levels and AFS use. A random sample of 120 lower-income households in Athens-Clarke County and Oconee County, Georgia, were contacted by telephone through the University of Georgia Survey Research Center. Participants were non-student households with annual incomes below $30,000. That figure, which is near the median household income for the area, was considered high enough to capture most AFS users.

The limitations of telephone surveys are well documented and need not be dealt on here (Frey and Oishi 1995). However, there is a particular problem with low-income households: although nearly all households in the area have telephones, most who do not are in the low-income category. That limitation had to be weighed against the cost of alternative methods and the difficulties associated with reaching some low-income groups (e.g., the homeless) by any survey method. Numbers were selected randomly from the telephone book. Random-digit dialing (RDD) represents a superior method for selecting participants. However, for a preliminary study, the major benefit of RDD, inclusion of unlisted numbers, did not seem sufficient (given this population) to warrant the higher cost.

Participants were simply asked: Which of the following have you used in the past year? They were then read the list of AFS services in Table 1. The survey ended with a question about the household's annual income (by category). By keeping the survey simple, straightforward responses were encouraged.

Results

Forty three of the 120 households contacted had used at least one of the AFS services other than money orders in the past year (Table 2).[3] Because some households had used more than one of the services, the figures reported here do not represent total incidents of AFS use. It is clear from Table 2 that our supposition about an inverse relationship between income and AFS use was *not* supported by the data.[4] AFS use does increase below $20,000, but with one exception, the distribution of users follows the distribution of the sample rather closely. The exception is the $15,000-19,999 category, where the proportion of users was almost twice what one would predict. This finding requires additional consideration and interpretation.

Table 2
Lower Income Consumers' Use of the Alternative Financial Sector

	Of Sample		Of Users	
Income	#	Per Cent	#	Per Cent
< $5,000	18	15.0	7	16.3
$5-9,999	21	17.5	6	14.0
$10-14,999	15	12.5	4	9.3
$15-19,999	24	20.0	16	37.2
$20-24,999	18	15.0	6	14.0
$25-29,999	11	9.2	3	7.0
NA	13	10.9	1	2.3
Total	120	--	43	—

Toward a Revisionist Hypothesis

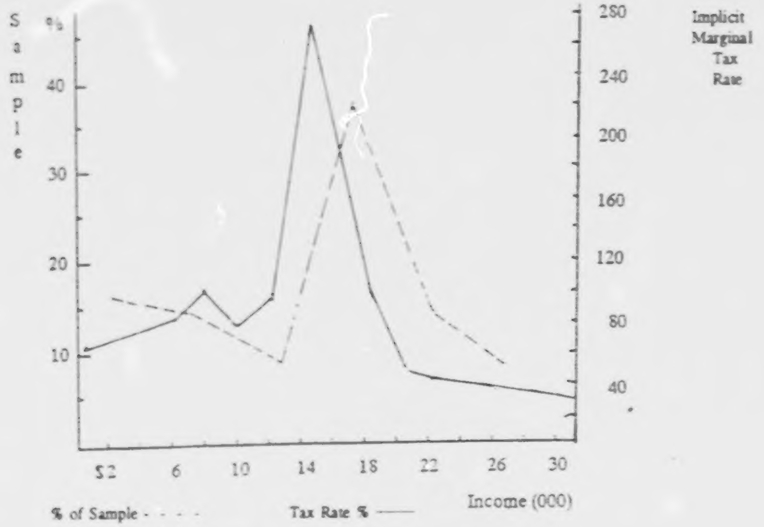
The first step in interpreting the spike in AFS use is to consider the position of households with annual incomes in the $15-20,000 range. If these households are of typical size, they would be *at or just above the poverty level* according to federal guidelines. Thus, their incomes would be in the range where additional earnings could be associated with the possible loss of public assistance.

When benefits are counted as part of income, additional *earned* income may be more than offset by losses in benefits. Walden (1995) has calculated the implicit marginal tax rates associated with loss of benefits for households in this group.[5] The solid line in Figure 2 (read with the scale on the right) shows that marginal rates can approach 300%. Data from Table 2 are superimposed on the same figure using the scale at the left. Both marginal tax rates and AFS use are characterized by spikes, with the latter coming at a slightly higher income level.[6] The question then becomes: is there more to this than an obvious coincidence in the patterns of both sets of data?

We cannot provide a definitive answer to that question with the data available. However, there are reasons to suggest that the answer is *yes*. Our new hypothesis would be, then, that AFS use is linked to the broader question of public assistance. That link deserves explanation.

Figure 1

AFS Usage Rates (left) and Implicit Marginal Tax Rates (right) by Income Level*



* Source: Usage, Table 2; Tax Rates, Walden, 1995. Reproduced with permission.

One advantage of the AFS is that it is largely anonymous; transactions cannot be traced, which we mentioned previously in the context of the informal economy (Swagler, Burton and Lewis 1995a). For households in the $15-20,000 range, this can be very important because reporting additional income carries a heavy penalty. By avoiding conventional financial institutions (though which transactions could be traced) and using the AFS, consumers can operate invisibly. Thus, casual workers are paid in cash, using money orders when a negotiable instrument is needed. Check-cashing outlets are available for when checks are received and pawn shops or rent-to-own stores may be used for short-term credit. Note that the household may even keep a checking account (and hence be able to cash post-dated checks), but not use it for most financial transactions. In short, the alternative financial sector becomes a mechanism for households to shelter their income. They may earn, and spend, income which, if reported, would disqualify them from significant amounts of public assistance.

At least two other sources of support may be found for this hypothesis. The first is the magnitude of the rates involved. At a time when a 17% marginal tax rate is being touted as a worthy goal, rates 10 to 15 times as high seem incomprehensible. Look again, however, at the rates charged by the AFS in Table 1. These rates seem unreasonable when compared to conventional credit charges, but do not appear nearly so outlandish when compared to the marginal tax rates households might otherwise have to pay. The reference points make sense.

Secondly, participation in the informal economy, or off-the-books employment, by lower-income consumers is well documented.[7] Popular press accounts suggest that the informal economy is at the heart of economic activity in many urban areas (Templin 1995). The same point is made in scholarly studies. In a report on 214 AFDC recipients and 165 low-wage workers in four cities, Edin (1995) reported that 40% worked in the informal economy and 86% received covert payments from family, friends or absent fathers. For AFDC recipients, 34% of monthly income came from covert payments, the informal economy or the underground economy. In other words, these households had something to shelter and would, presumably, have suffered significant losses had the income been reported.

To the extent that sheltering income is a driving force behind use of the AFS, traditional responses (including our own) miss the mark. Programs to improve consumer protection, expand educational efforts or expand disclosure will be ineffective because the problem is not rooted ignorance or manipulation. Let us emphasize that we are not suggesting that the income-shelter function explains all AFS use. Educational and related efforts will still be needed for many, probably most, users. To the extent, however, that the AFS is linked to more general questions of qualifying for public assistance, an entirely new dimension must be considered.

We have not proved that point. Both data and methodological limitations make that impossible. Our goal is merely to raise the possibility as a serious consideration which merits further investigation. Doing so implicitly raises two other points. First, low-income consumers may behave much more like their middle-income counterparts than is commonly accepted. The mechanisms are different (and, in the case of low-income consumers, often misunderstood), but the goal is the same. Secondly, the alternative financial sector should not be considered in isolation, but as part of the fabric of the economic life of the low-income consumer.

Acknowledgements

We gratefully acknowledge support from the College of Family and Consumer Sciences Faculty Development Fund and the Department of Housing and Consumer Economics, The University of Georgia.

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Endnotes

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3. Money orders were not included because they tend to be used by a wider segment of the population. Thus, the analysis was confined to those services most closely associated with low-income groups.
4. It should be noted, however, that the data do contradict the common contention that low-income groups do not use credit (Canner, Kennickell & Luckett 1995). Such statements may be true for *conventional* credit sources, but not if one includes the AFS. That fact underscores the importance of including the AFS in analyses of household credit use.
5. Walden's calculations are for North Carolina. His income measure includes earnings, earned income tax credit, AFDC, Food Stamps, housing assistance and Medicaid benefits, minus social security, federal income and state income taxes and expenses associated with work and child care (1995, 73).
6. Walden notes that the tax-rate spike begins at about $14,000 and extends to $20,000, which corresponds almost exactly with the income category in our study.
7. Terminology here can be confusing. The terms *underground, off-the-books* and *informal* economy are sometimes used synonymously. More commonly, the underground economy refers to illegal activities. We use informal economy to mean work for income which is unreported. Off-the-books activity includes both of these, as well as covert payments and in-kind support from friends and family members.

Low-Income Consumers' Use of the Alternative Financial Sector

This paper examines low-income consumers' use of the Alternative Financial Sector (AFS). It focuses on types of services used, frequency of use, reasons for use, and intended future use. Results indicated that all of the alternative financial services, with the exception of payday loans, were used to some extent by respondents in the study. Frequency of use varied considerably but reasons for use and intended future use were similar among respondents. The most important reason for using the AFS was the immediate need for cash.

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Introduction

As noted in the previous paper by Swagler and Lewis, low-income consumers tend to be heavy users of the Alternative Financial Sector (AFS). Thus, use of the AFS poses high costs on the segment of the population which can least afford them (Swagler, Burton, & Lewis, 1995a; 1995b). If the cost of these services are high, then why are low-income consumers using them? The goal of this paper is to shed some light on this important question.

Methodology

Sample and Data Collection

Data for this preliminary study were collected via two different sources: focus group interviews and telephone surveys. Data from the focus group interviews were collected in Summer and Fall 1995 in five local housing projects in Georgia. A total of 27 persons who had used one or more alternative financial services participated in the interviews. As noted in Table 1, the mean age of the sample was 37.9 years. The majority of the sample were black (96.3%), female (92.6%), and had incomes below $4,999 (51.9%).

Data from the telephone surveys were collected in Winter 1996. The sample consisted of 120 persons (users and nonusers of the AFS) whose annual incomes were $20,000 or below. Refer to Swagler and Lewis in the previous paper for additional information on data collection procedures for the telephone surveys. With the exception of the income cutoff, data collection procedures were the same. Demographic characteristics for this sample are presented in Table 2. The questions examined in this study from the focus group interviews and telephone surveys, to determine why low-income consumers use services provided by the AFS, are provided in the Appendix.

Table 1
Demographic Characteristics: Focus Groups (n=27)

Variable	Frequency	Percent	Mean
Age			37.9
Race			
White	1	3.7	
Black	26	96.3	
Gender			
Male	2	7.4	
Female	25	92.6	
Income			
Below 4,999	14	51.9	
5,000 -9,999	4	14.8	
10,000-14,999	3	11.1	
15,000-19,999	2	7.4	
20,000-29,999	1	3.7	
Above 30,000	1	3.7	
No Response	2	7.4	

Data Analysis

To examine low-income consumers' use of services in the AFS, the data collected via the focus group interviews were transcribed and summarized. Because there were so few users of the AFS in the telephone surveys, differences between users and nonusers could not be examined. Therefore, frequencies and percentages were calculated to describe the behavior of the users of the AFS.

Focus Group Findings

The most widely used services in the AFS among all five focus groups were rent-to-own programs, check-cashing outlets, refund-anticipation loans, and pawn shops. Less frequently used were car-title loans and payday loans. Only one person had used a car-title loan, and payday loans were not used by anyone. This was not surprising given that very few of the respondents had checking accounts.

Table 2
Demographic Characteristics: Telephone Surveys (n=120)

Variable	Frequency	Percent	Mean
Age			46.2
Household Size			2.5
Gender			
Male	36	30.0	
Female	72	60.0	
Missing	12	10.0	
Marital Status			
Married	43	35.8	
Single	35	29.2	
Div/Sep	22	18.3	
Widowed	20	16.7	
Education			
< 8 Years	9	7.5	
8-12 Years	17	14.2	
HS Diploma	24	20.0	
Some College	39	32.5	
College Grad	19	15.8	
Post Grad	12	10.0	
Income			
Below 3,000	10	8.3	
3,000 -5,999	10	8.3	
6,000 -8,999	10	8.3	
9,000-11,999	10	8.3	
12,000-14,999	23	19.2	
15,000-17,999	22	18.3	
Above 18,000	27	22.5	
Don't Know	3	2.5	
No Response	5	4.2	

Reasons noted by respondents for using *rent-to-own programs* included bad credit, no down payment needed, cheaper per payment, and no credit check. "You can spend $32 a month and get a house full of furniture" said one respondent. Another said "They don't check credit-don't ask for anything. You just go in and maybe fill out an application, and they bring it on out to you."

The following reasons were given by respondents who used *check-cashing outlets*. These were no ID, no transportation to bank, no bank account, and convenience (unavailability of banks on weekends and at night). Respondents pointed out that check-cashing outlets stayed open until 7:00 or 8:00 pm. Some reasons stated for not having a bank account were can't get an account if you receive AFDC, the bank hassles you (e.g., if a person does not have sufficient money in their account to cover the check, then the bank will not cash it), and worry about bouncing checks because of inability to balance the checkbook. One respondent stated "I had a checking account once, but it was a ripoff, so I got rid of it. I asked the bank to hold a check for one week until I deposited the money. They did not hold the check and charged me $15 for insufficient funds." On the other hand, some respondents who had used check-cashing services, now felt that they were ripoffs.

"I want my money quick, needed the money bad, and emergency" were common responses given by respondents who used *refund-anticipation loans*. One person said "I am entitled to get my money back then." Another said "It is right after Christmas, and I'm behind in my bills."

There seemed to be only one reason for the use of *pawn shops*. This was "I needed some money." One person stated "I got behind, and it was hard to catch up. I needed some money."

The reason the person used the *car-title loan* was "I wanted to get another car, so I pawned the car I had." The respondent further indicated that the cost incurred wasn't worth it because the loan lasted 2 years, 3 months and 4 days.

Use of the money provided through services in the AFS, as noted by respondents, was used to pay bills. "The money is needed for needed items, not wanted items" said one respondent. Overall, respondents knew that the services in the AFS cost more than services provided through the TFS. They also knew that the cost of the service depended on the size of the transaction (e.g., the size of the check being cashed). However, frequency of use varied among respondents. Some said they use some of the services on a routine basis while others said they use them every now and then. "It depends on what I want. I go in when I need something" said one respondent.

Telephone Survey Findings

As shown in Table 3, a small percentage of the 120 respondents used services offered by the AFS. Excluding money orders, only 18.3% of the sample used one or more of the services. Only 8.3% of the sample used refund-anticipation loans, 6.7 % used pawn shops, 1.7% used car-title loans, 7.6% used check-cashing outlets, 0% used post-dated checks (payday loans), and

.8% used rent-to-own programs. Approximately 43% of the sample used money orders; however, a large number (60.9%) had used them only a few times in the past 12 months.

Table 3
Users and Nonusers of the AFS (n=120)

Variables	Users Frequency (%)	Nonusers Frequency (%)*
One or More Services	22 (18.3)	98 (81.7)
RALs	10 (8.3)	108 (90.0)
Money Order	51 (42.5)	69 (57.5)
Pawn Shop	8 (6.7)	111 (92.5)
Car-Title Loan	2 (1.7)	118 (98.3)
Check Cashing	9 (7.5)	110 (91.7)
Post-Dated	0 (0.0)	119 (100.0)
Rent to Own	1 (0.8)	119 (99.2)

*Because of missing data, frequencies and percents don't always equal 120 and 100%, respectively.

The reasons given by respondents for using pawn shops were money was available immediately (100%), people were friendly (75%), location was convenient (62.5%), not much hassle (50.0%), didn't think the bank or finance company would loan them the money (37.5%), cost less than other places (25%), and no credit check required (12.5%). Money was available immediately and didn't think the bank or finance company would loan were listed as the two most important reasons. Approximately 63% noted that their use of pawn shops would either stay the same or increase.

The 1.7% of the sample who used car-title loans only used them once. Fifty percent of those who used this service did so because they thought the people were friendly and it cost less than other places, while 100.0% listed all other reasons as important. The most important reason for use of this service was money is available immediately. Fifty percent said their use of this service would decrease while the other half said it would stay about the same.

Among those respondents who used check-cashing outlets, frequency of use ranged from 1 to 14 times, with average use of 7.7 times. Reasons for use included money available immediately (100.0%), didn't think bank or finance company would loan them the money (88.8%), people were friendly (77.8%), convenient location (66.7%), not much hassle (66.7%), no credit check required (33.3%), and cost less than other places (11.1%). Most important reasons given were money available immediately, convenient location, people friendly, and not much hassle. About 78 percent said their use of this service would either remain the same or increase.

The 0.8% of the sample who used rent-to-own programs only used the program once. Further, 100% of those who used rent-to-own services listed all of the reasons for their use. However, the most important reason noted was not much hassle. Future use of rent-to-own by this group was expected to remain the same (100.0%).

An interesting finding is that half of the respondents who used one or more AFS services (excluding money orders and RALS) did feel welcome at banks or credit unions, and 66.7% felt that banks and credit unions were located conveniently. A smaller percentage (33%) felt welcome at the AFS businesses, and felt that the these businesses were conveniently located (50%). However, respondents were more likely (41.7%) to use AFS businesses because they saw these businesses in their neighborhoods than any of the other reasons listed. Approximately 17% used the AFS at the recommendation of a friend or relative and the encouragement of a newspaper or flyer, while 8.3% were encouraged by a radio or TV announcement.

Summary

Results from this study indicate that, to some extent, low-income consumers use all of the AFS services except payday loans. However, frequency of use varies among respondents and types of services. Some respondents use some of these services frequently while others use them once or twice. Even though frequency of use is low for many, the majority noted that their use would probably stay the same or increase. Many reasons were given for use, but the most important reason provided for use of AFS services was the immediate need for cash.

The findings of this study are consistent with the examination of Yellow Page advertisements in Swagler, Burton and Lewis's (1995a) study. The results of this examination concluded that businesses in the AFS use immediacy, convenience, friendliness and cost to attract customers with immediacy emphasized most in advertisements. Obviously, the AFS businesses have developed strategies to attract their target market. Therefore, consumer educators have to map out strategies which will help low-income consumers avoid these high cost financial services.

Appendix

Focus Group Questions

1. What do you do when you need money for something and you don't have enough on hand?
2. What might be the reason someone would go to an Alternative Financial Service?
3. What do you usually do with the money you have borrowed?
4. Where do you go when you want to cash a check, send cash, file taxes, or any other AFS service?
5. Does the AFS charge more than the Traditional Financial Sector (TFS)?
6. How much more do you think they charge?
7. How often do you use AFS for these services?

Telephone Survey Questions

1. During the past 12 months, have you gotten a rapid refund on taxes? Yes or No.
2. During the past 12 months, have you purchased a money order? Yes or No.
3. How often have you purchased a money order in the past 12 months?
4. Have you purchased money orders a few times, several times, or a great many times?
5. During the past 12 months, have you pawned something at a pawn shop? pawned a car title? used a check-cashing service? cashed a post-dated check? used rent to own? Yes or No.
6. For each of the services respondents used, they were given a list of reasons why people might use type of service and asked to indicate if that reason is why they used type of service. The reasons given to respondents were 1) no credit check was required, 2) not much hassle, 3) the people were friendly, 4) location was convenient, 5) money was available immediately, 6) it cost less than other places, and 7) didn't think bank or finance company would loan me the money.
7. Which was the most important reason you used type of service?
8. How often have you used type of service in the last 12 months?
9. Do you think your use of type of service will decrease, stay about the same, or decrease in the future?
10. When you do business with a bank or credit union, do the people make you feel welcome?
11. When you use the businesses we've discussed-pawn shops, rent-to-own stores, and check-cashing outlets, do the people there make you feel welcome?
12. Are banks and credit unions located conveniently for you?
13. Are the businesses we've just discussed-pawn shops, rent-to-own stores, and check-cashing outlets located conveniently for you?
14. What encouraged you to use the businesses we've discussed (that is, pawn shops, rent-to-own stores, or check-cashing outlets)? Did a recommendation of a friend or relative encourage you to use these types of businesses?
15. Did a TV or radio announcement encourage you to use these types of businesses?
16. Did a newspaper or flyer encourage you to use these types of businesses?
17. Did you see one of these businesses in your neighborhood and decide to use it?

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The Impact of Rising Bank Fees on the Use of Alternative Financial Services

Rising bank fees and reduced services have helped force low-income consumers into the alternative financial sector. Laws and regulations, such as caps on fees and eased restrictions on credit unions, can benefit these disenfranchised consumers. Low-income consumers can take advantage of financing available to form nonprofit cooperatives to replace predatory enterprises such as check cashers. Financial Consumers Associations can be established to counsel consumers and represent consumer interests.

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Commercial banks generated profits of $48.8 billion in 1995, marking the fourth consecutive year of record bank earnings. The $4.2 billion jump in profits compared to 1994 resulted primarily from increased interest and fee income. Interest spreads, the difference between rates charged by banks for loans and rates paid on deposits, were among the widest in history.

According to the Federal Deposit Insurance Corporation, more than $15 billion in revenues was generated from service fees on deposit accounts in 1995, reflecting the successful implementation of a three-part fee strategy by financial institutions. Banks are: (1) increasing existing fees, (2) inventing new fees, and (3) making it more difficult for accountholders to avoid fees by, for example, raising the minimum balance needed for fee waivers. The number of fees assessed by banks has risen from 96 to 250 in just five years, according to a review of bank fee brochures. Some of the newer fees include charges for deposit corrections, fees for closing an account by mail and dormant automated teller machine (ATM) card fees assessed for not using an ATM card enough.

The quest by bankers for ever-higher profits has helped to push low-income consumers from traditional financial institutions into the clutches of the alternative financial sector. Not only are low- income consumers being priced out of the traditional banking sector, but draconian cost-cutting efforts undertaken to further boost banks' bottom lines have led to shuttered branches and reduced services in poorer neighborhoods. Check cashing outlets and pawnshops prey upon these disenfranchised consumers. Instead, positive alternatives, including lifeline banking, credit unions and cooperatives, should be supported. Additionally, Financial Consumers Associations can become a vehicle for cast-off consumers to organize for change.

Traditional Banking Sector Casts Off Low-Income Consumers

Rising bank fees and shuttered branches are helping to force low-income consumers into the clutches of the alternative financial sector.

Pricing Consumers Out of Traditional Banking Sector

The Center for Study of Responsive Law and the U.S. Public Interest Research Group reviewed bank fee brochures from across the country in August 1995 (U.S. Public Interest Research Group and Center for Study of Responsive Law, 1995). Results of the survey showed that bank fees had risen at twice the rate of inflation from 1993 to 1995. Regular checking accounts cost an average $202 annually, an increase of 10 percent since 1993.[2] The balance needed to avoid fees was $1,242, up 30 percent since 1993. Fees for savings accounts increased 9 percent from 1993 to 1995, to $30.89 annually. Survey results showed that consumers would incur a net annual cost of $25.29, after their interest earnings were deducted, to maintain a savings account with a balance of $200.

The survey also found that large banks - those in the top 300 nationwide in terms of deposits -assessed higher fees than smaller banks. For example, annual costs for regular checking accounts were 9 percent higher at large banks compared to small banks. Similarly, the Federal Reserve Board reported in September 1995 that out-of-state banks, e.g., large interstate banks, assessed higher fees than in-state banks.

Limiting Traditional Banking Services in Low-Income Neighborhoods

Traditional banking services are limited in poorer neighborhoods, especially relative to the offerings in the more wealthy suburbs. The push by financial institutions to get their customers to use electronic banking may further disenfranchise low-income consumers.

A 1994 survey by the New York City Public Advocate's office found that the number of commercial bank branches in New York City had declined 7.4 percent from 1978 to 1994, while the number of suburban branches had increased 10.3 percent (Green, The Poor Pay More,1994). A shift in population was not a factor. The number of residents had increased in the low-income areas of New York City experiencing the largest decrease in the number of bank branches. Conversely, the population had remained constant or decreased in the wealthier suburbs where the number of branches had increased.

A second 1994 survey by the New York City Public Advocate's office found a disparity between the wealthier suburbs and the low-income areas of New York City in terms of the number of bank branches and ATMs per resident and the number of hours that branches were open (Green, Don't Bank On Us, 1994). There were fewer residents per bank and per ATM and banks were open more hours, especially during evenings and on week-ends, in the suburbs.

Banks, such as Citibank, have promoted electronic banking, including home-based computer banking, as a low-cost alternative to traditional banking methods by offering low or no fees on these transactions. Activists, though, argue that many older customers and the poor have difficulty adjusting to the new technology (Kraus, 1996). Critics charge that banks simply don't want to serve moderate and low-income people and are practicing "retail reengineering." Citibank, for example, has closed or converted to automated banking centers 24 percent of its New York City offices.

Alternative Financial Sector Preys on Disenfranchised Consumers

The alternative financial sector, including check cashing outlets and pawnshops, preys on consumers cast off by traditional banks. Laws and regulations can limit the sector's most egregious practices.

Check Cashing Outlets

According to the 1994 survey by the New York City Public Advocate's office (Green, The Poor Pay More, 1994), there is an inverse relationship between check cashers and bank branches in a neighborhood. In the poorest areas, the number of residents per bank branch is twice the number per check casher; in wealthier areas, the number of residents per check casher is more than six times the number per bank branch. Yet, the Check Cashers Association of New York claims that there is no statistical relationship between the closing of a bank branch and the opening of a check cashing store (Goldman, 1994). The Association testified instead that the main reason for the proliferation of non-bank users was "socioeconomic," not the high cost of banking services or branch closings.[3] At the time, the Association was attempting to limit potential damage to its members from a New York law requiring banks to offer low-cost checking accounts.

In New York alone, check cashers cash more than 30 million checks each year, with a total face value of more than $10 billion. Nationally, fees assessed by check cashers range from 2 percent to 10 percent of the face value. According to the New York City Public Advocate office's survey (Green, The Poor Pay More, 1994), consumers who rely on check cashers pay about $500 per year to cash checks and pay bills, compared to $60 if they had used a bank. One way to limit price gouging by check cashers is to pass legislation and implement regulations capping fees. In New York state, for example, the fee is set by the Superintendent of Banks and is currently 1.1 percent of the face value of the check.

Pawnshops

At pawnshops, a broker makes a fixed-term loan to a consumer who leaves collateral in the possession of the broker. The collateral is returned if the loan and fees are repaid; if not, the broker keeps the property and the debt is extinguished. In many states, pawnshops charge interest rates as high as 240 percent (Hudson, 1993).

Disclosure requirements of the federal Truth-in-Lending Act (TILA) may provide some protection for consumers. Borrowers have won a number of TILA cases against pawnshops. American Title Brokers, for example, ran a "Pawn the Title and Keep the Car" scheme where borrowers pledged their cars as collateral for a loan. The borrowers simultaneously both borrowed money and leased their cars from American Title Company, paying weekly rental fees on the loan and the lease. The weekly rental rate was determined by the amount of money the customer borrowed and the weekly lease payment was always 10 percent of the amount of the loan. In Pendleton v. American Title Brokers, Inc.[754 F.Supp. 860], the court concluded that the weekly rental charge was imposed incident to the extension of credit and constituted a finance charge. Pendleton was awarded statutory damages, attorney's fees and costs because the lease agreement did not conform to TILA requirements because the interest rate, total of the payments and fees were not disclosed.

Empowering Disenfranchised Financial Consumers

Lifeline checking accounts, credit unions and cooperatives can make financial transactions affordable. Financial Consumers Associations can educate consumers and represent their consumer interests.

Lifeline Checking

Lifeline checking accounts offered by financial institutions charge low or no fees and allow a limited number of free transactions each month. In New Jersey, for example, all banks are required by state law to offer lifeline checking with a maximum required balance of $1, a maximum monthly fee of $3, unlimited free deposits and eight free checks per month. The New York state legislature has passed a similar law. Unfortunately, federal law may preempt the New Jersey law and many NY banks fail to promote the account.

In 1992, the Office of the Comptroller of the Currency (OCC) issued a decision giving national banks permission to ignore the New Jersey lifeline banking law. The OCC claimed that the New Jersey law conflicted with the federal Bank Enterprise Act which reduces deposit insurance premiums for banks that offer low-fee basic banking services to low-income communities.[3] According to the OCC, the federal law makes offering lifeline-type accounts voluntary, while the New Jersey law requires banks to offer these accounts. The New Jersey Department of Banking recently asked the OCC to review its decision. The Department of Banking argues that the federal and state laws do not conflict, since both the New Jersey legislature and the U.S. Congress intended to make banking services available to low-income people.

The New York lifeline banking law went into effect in January 1995. A survey by the New York Public Interest Research Group one year later found that (1) one in six branches did not offer a lifeline account at all, (2) no branches had signs about lifeline banking, (3) representatives in 43 percent of the branches that offered lifeline checking did not volunteer information, and (4) brochures describing lifeline banking were easily accessible at only 40 percent of the branches surveyed (New York Public Interest Research Group, 1996).

Credit Unions

In July 1994, the federal government liberalized membership rules to allow credit unions to move into low income areas, i.e., areas where the average income is less than the national average. Previously, affiliation rules for credit unions were stricter, requiring a common bond such as occupation or association (e.g., union membership). Credit unions generally assess fewer fees and offer lower fees than banks; unfortunately, credit union fees are rising.

According to data collected by the Credit Union National Association and Sheshunoff Information Services, far fewer credit unions than banks charge fees for such things as checking accounts, bounced checks and credit cards (Rhoads, 1996). Credit unions that do assess fees, do so at much lower rates than banks. However, credit unions are relying much more on fee income than they did a few years ago and fee income as a percentage of average assets is growing much more quickly at credit unions than at banks.

Cooperatives

A cooperative is a business owned and controlled by those who use its services. The member-users finance and operate the business for their mutual benefit. Control is democratic and earnings are distributed according to patronage provided by the members or retained in the business for overall member benefit. Purchasing cooperatives provide members with consumer goods, products for resale through their members, or equipment, supplies or services for their business operations. Service cooperatives provide services related to the production of a product or service for individuals or businesses.

In 1978, Congress passed the National Consumer Cooperative Bank Act, after determining that user-owned cooperatives were a proven method for broadening ownership and control of economic organizations, increasing the number of market participants, narrowing spreads between producers' prices and consumers' prices, raising the quality of goods and services available to cooperative members, and building bridges between producers and consumers and their members and patrons. Congress had found that consumer and other types of self-help cooperatives had been hampered in their formation and growth by the lack of access to adequate cooperative credit facilities and the lack of technical assistance. Therefore, Congress established and funded through federal appropriations the National Consumer Cooperative Bank (NCB) to make available necessary financial and technical assistance to cooperative self-help endeavors. Today, the NCB is a private, cooperatively-owned financial services company and a leading source of financing for cooperative enterprises. The NCB Development Corporation is the development finance affiliate of the NCB, providing financing to start-up and existing cooperatives and working with developers, intermediary organizations and others to finance cooperative ventures.

Low income neighborhoods are frequently victimized by profiteering businesses that target the poor

Examples include second mortgage companies, pawn shops, check cashers, used-car dealers, finance companies and rent-to-own stores. All of these enterprises could be established by member-users as nonprofit cooperatives funded by the NCB, thus making the services available without the price-gouging of unscrupulous entrepreneurs. For example, philanthropic pawnshops, including the Provident Loan Society (PLS) of New York City, have existed throughout the United States (Caskey, 1994). These institutions recognize that the poor need loans at certain times and provide loans on anything of value, at more reasonable, fixed rates. In 1991, the PLS made 56,428 loans totalling $15,213,129 from its six locations in New York City. The loans ranged from $25 to $25,000, and averaged $270, compared to $60 at commercial pawnshops. Interest rates averaged 26 percent, compared to 36 percent charged by commercial pawnbrokers.

Financial Consumers Associations

Financial Consumers Associations (FCAs) are state-chartered, nonprofit organizations, formed by financial consumers and based on the Citizens Utility Board (CUB) concept. CUBs are organized advocacy groups that give consumers a voice in regulatory proceedings which control monopoly utilities. Their effectiveness in saving utility consumers from unwarranted rate increases and educating the public about energy conservation has been impressive. The Illinois CUB, for example, assisted in saving consumers over $3 billion in eight years and participated in a major settlement of six cases against Commonwealth Edison, resulting in 12-month savings of $272 for the average single-family residential consumer.

FCAs can empower low-income consumers by providing them with the expertise to make sound financial decisions and by giving them an effective, unified voice in legislatures, regulatory agencies and judicial proceedings. Specifically, FCAs publish educational material, collect and report comparative information about financial institutions and products, and counsel consumers about financial alternatives. FCA advocates represent consumer interests before state and national legislatures and agencies in order to obtain consumer-friendly legislation and regulations. FCA attorneys assist consumers in arbitration and court cases against financial institutions.

Conclusion

Banks are casting off low-income consumers by raising prices and reducing services. Laws and regulations can protect these disenfranchised consumers by, for example, setting caps on fees, mandating adequate disclosure and easing restrictions on services. Low-income consumers can help themselves by establishing their own financial service cooperatives and forming educational and advocacy organizations.

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2. All cost calculations used industry averages for items such as the number of checks cashed, ATM transactions, bounced checks and returned deposits.
3. Socioeconomic factors include the decline and stagnation in incomes of lower-paid households.
4. The value of this incentive is now negligible because the FDIC recently cut deposit insurance premiums paid by 83 percent.

The Alternative Financial Sector: Policy Implications for Poor Households

This paper discusses the effects of banking deregulation and technology on poor households and the subsequent rise in the alternative financial sector. It concludes with an analysis of policy solutions to problems regarding the use of alternative financial services by poor households.

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Introduction

The alternative financial sector (AFS), defined as including pawn shops, check cashing outlets, rent-to-own firms, and refund anticipation loans, was introduced and defined in the previous papers by Swagler and by Lewis. These colleagues have used data from preliminary studies to inform the literature as to the characteristics of persons who use financial services of the AFS, which services they use, and why they might use them. In this paper, the pros and cons of policy strategies that might be considered in protecting poor households in their dealing with the AFS are discussed.

Evolution of Consumer Debt

Although consumer credit has been around for a long time, it was not until after WWII that this type of credit became widely used. In recent years it has grown to the extent that consumer debt causes alarm among many economists. For the past four years, the percentage of wages that services debt payments has risen from around 1.5% in 1991 to about 10% in 1995 (Bleakley, 1995). 1995 also saw a sharp increase in personal bankruptcies and credit card payment delinquencies (Bleakley, 1995). Much of this debt is in the form of credit card charges.

Yet, poor households may differ from non-poor households in the type of debt they incur. In a Chicago study, only 44% of poor households use credit cards, whereas better than three-quarters of the non poor use them. In addition only 27% of the poor have auto loans and 5% have home equity loans, whereas the non-poor have 59% and 15% respectively (Metro Chicago, 1994). Since the poor need sources of credit as much, if not more than the non-poor, it can only be assumed they are turning to alternative sources. These sources probably consist of friends and relatives, underground financial markets and the AFS. In response to the needs of poor households, the AFS has grown substantially in recent years (Casky, 1994; Marino, 1993).

Evolution of Credit Policy

Although substantive government policy regarding credit is generally a 20th century phenomenon, credit policy dates back to biblical days whereas the charging of interest on loans is prohibited in the Old Testament. Early U.S. credit regulation was primarily in the area of usury laws. However, in the consumer protection heyday of the late 1960s and early 1970s, several milestone credit laws were passed on the federal and the state level. These laws generally took three forms: information disclosure (e.g., Truth in Lending 1968), anti-discrimination (e.g., Equal Credit Opportunity Act, 1974; Community Reinvestment Act, 1977), and specific prohibitive behavior in credit reporting and credit collection (e.g., Fair Credit Reporting Act, 1972, Fair Debt Collections Practices Act, 1977). Since 1977, there has been little substantive pro-consumer federal credit legislation. There has been some anti-consumer credit legislation passed on the state level during post-1970s era in the form of usury law relaxation and laws to protect the rent-to-own industry in the 1990s. Banking deregulation on the federal level in the early 1980s, although not explicitly about credit policy for the poor, has had a substantial impact (Brobeck, 1991; Obermiller, 1988). One of the primary impacts of banking deregulation on poor households was the merging of many banks with the resulting decrease in the number of competitors and therefore the number of banks particularly in outlets in poor neighborhoods (More bank Mergers, 1996, How Good?, 1996). The number of community banks went from 9,667 in 1980 to 2,733 in 1995 with the number of remaining banks expected to decrease by another 50% by the year 2000 (O'Brien, 1995a). The decrease in competition may have also lead to a dramatic increase in banking fees (see O'Brien, 1995b, also the concurrent paper by Shields). Banks, in an attempt to maximize profits, appear to have a greater interest in the more lucrative accounts of larger patrons and less interested in the small accounts of the poor. Also, with the mergers, there is a trend toward the management of the banks being more distant from many of their customers. Local banks under local management may be more sensitive to the needs of the local community.

Impact of Technology in Banking on Low-income Households

Not only has banking deregulation impacted financial services, technology has also had a substantial consequence (How good...? 1996). The advent of the ATM has brought convenience to most middle and upper class Americans, but not a commensurate advantage for the poor. With cash machines, banks see less of a need for neighborhood banks (How good...? 1996). Yet ATMs, if located in poor neighborhoods, may not be used by the poor due to personal security reasons. In addition, a bank account or credit card account is a prerequisite to ATM access.

Many banks are introducing and hyping computer banking. However, this is also not an option to the poor and this technology may have the propensity to replace branches (O'Brien, 1995c). The poor typically work and live in a cash society and computer banking is often limited to electronic money transfers. When the poor are also the elderly, then there is a great unwillingness to use both the computer and the ATM forms of high-tech banking (Seniors Shun high tech 1994).

The use of credit cards is another segment of the technological revolution in banking. A survey reported in Business Week "Plastic Talks", (1995) revealed that consumer payments made by check in transactions conducted outside the home are used by about 22% of the population, down from about 29% in 1987, cash use is down from about 48% in 1987 to 32% in 1994, and that plastic use is up from about 28% in 1987 to 45% in 1994. This may indicate that the poor, who typically do not have credit cards, are becoming more disenfranchised from financial services than are the non-poor.

A basic appeal of the services of the AFS is the absence of technology in access to financial services. The providers of alternative financial services, like providers of alternative health services, emphasize personal service, rather than efficiency, in the dealing with their clientele. Observations in Athens and in Salt Lake often noted emphasis on the personal approach that was given to the clients.

As with any free market when a void is created, it is filled by an opportunistic entrepreneur. The void left by the loss of local banks, banks sensitive to the needs of the poor, and banks with reasonable fees, has been filled by the explosion of financial outlets in the AFS.

Discussion of Regulation and the Alternative Financial Sector

There are various approaches to policy questions concerning the AFS. The approach one would take would reflect how the AFS is perceived. Three views of the AFS (not necessarily mutually exclusive) are presented here along with policy approaches based on these views. The three views were articulated by Swagler, Burton and Lewis (1995a) and are as follows: The AFS is:

1. A logical market response to a set of problems faced by certain consumers. In this view, the AFS provides legitimate services for which there is a demonstrated demand;
2. a benign development which, unfortunately, facilitates consumers worst tendencies. This is similar to #1, but incorporates the possibility of abuse resulting from consumers' lack of knowledge or will power;
3. an evil industry (in whole or in part) which preys upon consumers who typically lack both political and economic leverage and thus have difficulty protecting themselves.

If one accepts #1, then the best policy may be to enact no direct regulatory policy. That is, under classical economic theory, this market will self correct and any interference with the market may have externalities that ultimately may be counter productive. However, there would still be a need for stringent anti-trust enforcement (Brown, 1993).

If one accepts #2, then proposed policy would emphasize education and counseling. Only education policy will be discussed here. For a discussion of counseling as it relates to the AFS, see Swagler, Burton and Lewis (1995b).

Education Policy

Policy that emphasizes education has the advantage of inviting only minimal government intervention. The trend to small government, either rightly or wrongly, is currently much in political fashion and therefore more acceptable to those who shape policy. Education may also be regarded as an investment in human capital and may be equated with the biblical admonition about giving people fish versus teaching people how to fish.

However, is education a realistic solution? Persons who use the AFS are beyond the age of formal education. In addition, extension and other type of social service programs reach relatively few persons. Public service announcements on TV might be effective; however, would this media really be prone to showing programs that would negatively affect its sponsors? Also, the mechanics of credit in the AFS are complex and continually changing thus making it difficult for anyone, let alone, someone with limited educational sophistication, to cope with the complexities of financial services. A greater concern is that even informed consumers may not be influenced by information concerning the excessive cost of services in the AFS. For persons who have external constraints, or who are impulsive, or have short time horizons, information and education is of little value (Swagler, Burton, & Lewis, 1995b)[4]. However, Alwit and Donley (1996) discount the idea that low-income consumers have short time horizons.

Disclosure Policy

Closely related to education policy would be policies to force information disclosure for products sold by the AFS. At one level it is intuitive to assume that a person would avoid paying from 300% to 500% APR for a loan. Although it might appear that a discussion about TIL disclosures is moot since federal and state truth-in-lending laws should already address this issue, observations of the AFS market in Georgia and Salt Lake by this author and his colleagues show that TIL disclosure of credit terms are generally ignored in advertising and in contracts. Many states have adopted rent-to-own legislation sponsored by the r-t-o industry that specifically declares that r-t-o transactions are not credit, therefore, the implicit interest rate for r-t-o transactions is generally not available in an explicit form. Post-dated check cashing is another example of how TIL is easily circumvented. When someone cashes a post dated check, there is no sign that says the APR is 520% and there is typically no contract involved. Even if disclosure requirements for TIL were enforced, would this change behavior for those clients with external constraints or with short time horizons?

Prohibition Regulation

If we take the approach that the AFS is an evil industry which preys upon consumers who have difficulty protecting themselves, then we may wish to proscribe any predatory behaviors ascribed to the AFS.

Prohibiting specific unconscionable behaviors does have certain advantages. Theoretically it protects all consumers, not just the ones who are able to take advantage of education and disclosure. Nor does it rely on voluntary compliance of the lenders. And, although this may not be considered an advantage by all policy makers, tough rules for lenders may protect debtors from their own weaknesses. On the other hand, for example, it restricts the choice of a casher of a post-dated check who has an immediate need for cash and little or no compunction about paying the exorbitantly high interest rates.

Advocating prohibitions on credit practices is not without other disadvantages. First, additional government regulation of markets is not politically feasible in today's less government, pro-business environment[5]. Even the relatively mild consumer banking regulations that have been on the books for decades are being challenged in Congress and in regulatory agencies. Second, because of the vast numbers of firms in the AFS, regulation would be costly and difficult. Third, lenders are clever when it comes to circumventing credit laws thus making restrictive laws irrelevant. And last, because of the typical lack of government enforcement, to get the protection from credit laws, consumers need to know their rights in the marketplace. Yet it takes a very sophisticated consumer to understand his/her credit rights and demand them for lenders.

Although credit regulation for the AFS may not be currently feasible at the federal level, some states may still have a desire to protect low income consumers knowing that if they are not concerned about the outflow of cash from a household, they may have to compensate by increasing welfare to the household.

Selected regulatory policies concerning the AFS are discussed here.

Usury Laws. Historically, one of the more utilized government credit policies has been the regulation of interest rates. For an extensive discussion of usury laws see Pridgen (1994). Usury laws went into disfavor during the double digit inflation of the late 70s and early 80s. It was argued that capping interest rates made lenders less likely grant loans to the less credit worthy people therefore cutting them off from legitimate credit.

Is capping interest rates for the services in the AFS a viable policy? Are the rates that often range between 300% and 520% APR exploitive or are they reasonable rates when risk, overhead and the market cost of money are factored? If the rates being charged are excessive compared to reasonable market rates, capping might be appropriate. If the rates are reasonable market rates when risk and other costs are considered, then any attempt to cap the rates below a reasonable market rate will only create a black market in lending and/or will drive the licensed lenders to find ways to circumvent usury statutes. Loan sharks who operate outside the law will probably be more predatory than licensed AFS lenders. In addition, AFS lenders have circumvented usury laws by making loans "off the books" and by using some other inventive methods. Pawn shops have been known to "buy" the pawned good from the customer and then "sell it back" to him/her later at an implicit usurious rate. In a rather complex scheme in Georgia, in order to circumvent usury laws concerning the cashing of post-dated checks, some lenders have developed a creative plan. In this scheme, they take title to some durable good (but do not physically take the good) of the debtor, accept a post-dated check for the amount the amount of cash immediately given the debtor plus an amount that the debtor is paying to lease back the good he/she just transferred to the seller. The title for the good is transferred back to the debtor when the lender cashes the check at a later date. This convoluted scheme with an APR in excess of 500% is called cash leasing.

Rent-to-Own Regulation Rent to own, sometimes referred to as a lease-purchase agreement, is a different regulatory problem. Although rto looks like credit, functions like credit, and an implicit APR can be calculated for rental agreements, the r-t-o industry has persuaded many legislatures to pass model "consumer protection" laws that essentially do some disclosures while at the same time, limiting competition in the rto industry and defining rto as *not* being credit. Ayer (1983) posits that "[a]ll the common uses of [these] leases are designed to avoid some other rule of law which produces and unfavorable result in a particular case." Burnham (1991) states that transactions in the form of a lease are used to evade some public policy--Uniform Commercial Code on differences between a lease and credit sale, Fair Debt Collections Practices Act, usury laws, the Truth in Lending Act, and states' retail installment sales acts. Therefore, a giant step in the regulation of the rent-to-own industry would be to repeal or rewrite the industry sponsored r-t-o laws so that the rent-to-own industry would have the same disclosure restrictions as credit. Burnham (1991) suggests, TIL laws as applied to the rto may be confusing to the consumer and should be rewritten to fit the r-t-o industry. However, this assumes the demand for r-t-o services is elastic, that r-t-o customers would then shop around for cheaper rent-to-own deals or optimally, the customer would compare the r-t-o price to the price plus interest charge of products from traditional merchants.

A New York law on the rent-to-own industry not only has disclosures and prohibitions, but also has a substantive provision that prohibit the total r-t-o cost from exceeding double the cash price (Burnham, 1991). However, calculating the cash price becomes problematic since the lessor will designate a list price that others merchants often discount. For an extensive discussion of suggested ways of regulating the rent-to-own industry, see Burnham (1991).

Sometimes courts become involved in setting policy concerning the AFS as in some cases involving rto. In a Connecticut decision, the legal concept of unconscionability high price was used to invalidate an r-t-o agreement where a consumer paid $1268 for a television that typically sold for $499. The court held that the unequal bargaining power of the buyer obligated the seller to explain the true nature of the contract (Murphy v. McNamara, 1979, cited in Pridgen, 1994). However, courts have not been consistent in this regard since in another case, a Kansas judge ruled that it is not unconscionable to charge $1768 for a television that had a retail value of only $918. In its finding, the court noted that the consumer not only had the use of the television but also received extra benefits such as not having responsibility for repairs, not having to pass any credit worthiness standard, and having the option to return the good at any time (Martin v. Heinold Commodities, 1991, cited in Pridgen, 1994). A U.S. judge in Minnesota recently ruled that rent-to-own contracts are subject to state usury laws and similar suits are pending in other states (Lambert, 1995).

Other Specific Prohibitions Prohibiting certain specific credit practices is not new. The FTC, using the legal principle of unconscionability, has proscribed such practices as holder-in-due-course, confession of judgement, and referral sales. Prohibitions that currently might be considered are bans on car title loans and bans on post-dated check cashing. Although some states have these bans, many states still permit them. Prohibitions on post-dated check cashing are particularly hard to enforce since this practice can be so easily done "off the books." The most that any ban might accomplish is limit the overt practice by discouraging advertising for such a scheme.

Increasing the Supply of Banking Services

Increase Incentives for "Rebanking"

Independent of the three ways that the AFS may be viewed, one way to approach the problems surrounding poor household's use of the AFS is to encourage "rebanking" to correct debanking. The term rebanking is used here to describe a policy to encourage a greater supply of traditional banking services in low income areas. Rebanking would give these households an alternative and would create competition for the AFS and in theory create a downward pressure on financial service prices. Since there is a debanking trend in the low income areas and this is presumably driven by technological alternatives and by insufficient profit margins, market forces alone may not be sufficient to provide lower cost alternatives to the AFS. Therefore a carrot and stick approach might be considered.

Using a stick approach, a licensed lender, would be required to provide branches in low income areas in exchange for the privilege of doing business in the city or state. The Community Reinvestment Act (CRA) takes a similar approach. The CRA authorizes federal financial regulatory agencies to refuse applications for bank mergers and branch openings if the applicant is not meeting the needs of the local community. In recent years, regulatory agencies have sought to weaken the requirement of the CRA.

The stick approach has both political and logistical problems. With the trend for less government, especially encouraged by the politically powerful banking industry, such a requirement would not have much political support. With the trend to regional and national banking, and the changing landscape of the banking industry with mergers and buyouts, it might be difficult to enforce a requirement for neighborhood banking.

The carrot approach may be more promising. By giving the traditional lenders some incentives in the form of tax breaks or some competitive advantage, these may, along with a desire to present a better image, encourage traditional lenders to compete with alternative lenders. However, the traditional lenders would need to learn the culture of the AFS patrons. To many of the poor, the lender is just not providing a loan, but is also giving value added in the form of personal and caring service.

Casky, who has done extensive research on portions of the AFS, favors moderate regulatory efforts to push low-cost banking services in low-income neighborhoods. He believes the regulators should draft reasonable regulations that allow the institutions that are providing services to the poor to survive (Federal Reserve Board, 1995). In addition Casky believes federal regulators should make a responsible effort to enforce these regulations.

Grass Roots Banking

Cooperatives have long been a source of consumer commodities for the poor, whether it is food or electricity. Credit unions are a type of co-op that grew in response to consumer needs for savings and credit. Co-ops should not be overlooked as a possible partial solution to financial needs of low income households. For example, in a project in Cincinnati, a coalition of concerned neighbors, social service professionals, and churches in conjunction with a credit union, established a cooperative to provide basic financial services within a poor community. Not only was the cooperative involved in lending, it also develeped systems for financial education. However, this project necessitated a grant, leadership, and dedicated citizens. For additional information on this project see Miller (1993).

Summary

Although the economic problems of poor households are exacerbated by their use of the services in the alternative financial sector, finding a policy to deal with problems presents many complexities. First, one has to decide if the AFS is a logical market response to a particular need not met elsewhere in economy, a benign institution facilitating consumer worst tendencies, or some evil industry with the sole purpose of exploiting the poor. Depending on how one perceives the AFS affects what policy one would advocate. If one does propose polices that encompass required disclosures, prohibitions, substantive action such as interest caps, or incentives for lenders to service low-income neighborhoods, several externalities must be considered along with political realities. In addition, any policy must take into consideration not only the technical attributes of the AFS but also the external and internal constraints of their clients. To ignore the financial need and the culture of the users of the AFS would result in a less than well-informed policy.

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Endnotes:

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4. A preliminary analysis of survey data collected in Georgia by Swagler and Lewis indicates that immediacy is a prominent motivator for obtaining services from the AFS.
5. A paper by Chakravarty, Feinberg, and Widdows, "Banking laws and the consumer," concurrently presented at this conference reports that banking customers believe that federal regulation in the banking industry is very important.

Measurement of the Value of Homemaker's Time: A Comparison of the Alternative Methods of the Opportunity Cost Approach

The purpose of this article was to examine the valuation of household production time of American full-time homemakers, using four variants of the opportunity cost approach. Limitations and advantages of each method were discussed.

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Introduction

Researchers have pointed out the importance of valuing homemaker's time for the purpose of its inclusion in national income accounts as well as a measure of well-being in the analysis of income distribution (Murphy, 1982; Peskin, 1983; Zick and Bryant, 1990). Valuing homemaker's time is also essential for the assessment of damages in wrongful death, injury litigation, and divorce.

The opportunity cost approach is one of the methods of valuing household production. The basic premise of the opportunity cost approach is that the value of household production time is at least the market value of the next best alternative, as determined by the homemaker's productivity-related characteristics.

The opportunity cost of household production time for individuals who work in the market is estimated by multiplying the number of hours spent in household production by the market wage rate (net of taxes). However, for individuals who are not employed in the market, assigning a wage to reflect the value of their household production time is problematic. Four variants of the opportunity cost approach, namely, imputed wage, potential wage, Heckman's two-stage reservation wage, and Kidd's reservation wage were used to valuate the household production time of American full-time homemakers.

Data and Characteristics of the Sample

Data for this study are from the 1990 Consumer Expenditure Interview Survey (U.S. Department of Labor, 1992). The sample used in this study consisted of 823 households in which the wife was employed in the marketplace, and 713 households in which the wife was a full-time homemaker.

Table 1
Descriptive Statistics of the Sample

Variable	Employed (n=823) mean	Non-employed (n=713) mean
Wife's age	38.39	51.08
Husband's income	27,151	17,539
Non-wage family income	2,488	9,376
Number of children under 18	1.08	.90
Wife's education	Percentage	
Less than high school	12	30
High school graduate	36	40
Some college	27	20
College graduate	25	10
Race		
Black	8	5
White	92	95
Region of residence		
Urban Northeast	20	20
Urban Midwest	22	21
Urban South	24	27
Urban West	19	19
Rural	15	13

Table 1 shows the means and standard deviation of the variables used in the analyses.

Results and Discussion

Imputed Wage Approach

Some researchers (Ferber & Birnbaum, 1980; Ferber & Green, 1985), have estimated the wage rate for the employed individuals in the sample and imputed the wage rate for homemakers according to their personal characteristics. The imputed wage is then multiplied by the number of hours spent in household production to give a lower-bound estimate of the value of household production time.

Since the survey did not include direct information about the hourly wage rates, total earnings by wives were divided by the number of hours of market work to derive offered market wage. The average offered wage per hour for the wives who were employed in the market was $11.74.

An ordinary least square regression equation that regressed wife's age, education, race, region of residence, occupation, and industry on offered wage for all wives who were in the labor force was estimated. The regression coefficients from the regression equation were then used to impute the hourly wage of wives who were full-time homemakers. Table 2 shows the wage regression for wives in the labor force. According to this imputation, the estimated wage for a full-time homemaker was $6.48.

Table 2
Wage Regression for American Wives in the Labor Force

Independent variables	Regression Coefficient
Constant	.411
Age	.066***
Age^2	-.007E-01***
Education[a]	
Less than high school	-.144
Some college	.136*
College graduate	.290***
Race[b]	
Black	.037
Region of residence[c]	
Urban Northeast	.377***
Urban Midwest	.117
Urban South	.042
Urban West	.209**
Occupation[d]	
Managerial and administrative	.187**
Service	-.257**
Farming, forestry, fishing	-1.751***
Precision production, craft & repair	-.112
Operators, fabricators, laborers	-.096
Self-employed	-1.388***
Industry[e]	
Agriculture, forestry, fishing	.344
Construction	-.048
Manufacturing	.156
Transportation, communication, and public utilities	.175
Wholesale & retail trade	-.058
Finance, insurance, real estate	.048
Public administration	.200
Adjusted R^2	.17***

[a] omitted category is "high school graduate"
[b] omitted category is "white"
[c] omitted category is "rural"
[d] omitted category is "technical"
[e] omitted category is "service"

*$p<.05$
**$p<.01$
***$p<.001$

This method of imputing wage to full-time homemakers leads to a censoring bias in the wage estimate due to the use of the endogenous criterion of labor force participation as the basis for selecting the sample (Heckman, 1974, 1979).

Potential Wage Approach

A method introduced by Heckman (1979), led to the development of models that correct for the effects of non-random sampling and the estimation of potential wages and reservation wages. The potential wage is the wage an individual could earn in the market given that individual's human capital endowment. The reservation wage, on the other hand, is the minimum wage that would entice an individual to join the labor force (Kinsey, 1986).

Three steps are involved in using the Heckman two-stage correction procedure to estimate the potential wage. First, probit analysis is used over the entire sample to determine the probability that an individual participates in the labor force. The parameters of the probit model are then used to derive lambda (λ), the inverse Mills ratio. Second, lambda is used as an additional regressor in a wage equation which is estimated using ordinary least squares over the sample of labor force participants. Third, parameters from the wage equation are used to estimate the potential wage rate for full-time homemakers as determined by their personal characteristics.

Table 3 presents the parameter estimates for the probability of labor force participation. Wife's age, husband's income, non-wage family income, wife's education, and being black had a positive and significant effect on the wife's probability of being employed in the market. However, having children under the age of two, as well as the number of children under 18 had a negative significant effect on joining the labor force.

The parameters of the probit estimation were used to calculate lambda, which in turn, was used to adjust for censoring bias in the wage equation. The coefficient of the probit lambda was not significantly different from zero, indicating that there were no differences in unobservable factors between full-time homemakers and wives who were employed in the market. The estimated potential hourly wage for household production by full-time homemakers was $6.47.

Heckman's Two-Stage Reservation Wage Model

Whereas the potential wage indicates the lower-bound estimate of home production time by a full-time homemaker, the reservation wage reflects the wage required by the wife to make her indifferent between the last hour of household production and an hour of market work.

Table 3
Parameter Estimates for the Probability of Labor Force Participation by American Wives

Independent variables	Probit Coefficient
Constant	-1.914***
Age	.165***
Age^2	-.002***
Husband's income	.004E-03*
Non-wage family income	.002E-02***
Number of children under 18	-.190***
Existence of children under age 2	-.388***
Education[b]	
Less than high school	-.342***
Some college	.187*
College graduate	.485***
Race[c]	
Black	.425**
Region of residence[d]	
Urban Northeast	.015
Urban Midwest	-.102
Urban South	-.203
Urban West	-.095

-Log-likelihood 778.610

[a] omitted category is "no children under age 2"

[b] omitted category is "high school graduate"

[c] omitted category is "white"

[d] omitted category is "rural"

*p<.05

**p<.01

***p<.001

The reservation wage can also be estimated using the Heckman's two-stage model. Three steps are involved. First, self selection bias is corrected by using probit analysis to estimate an equation that determines the probability of labor force participation. The parameters of this equation are used to derive lambda(λ).

Second, a two equation system is used to estimate the reservation wage:

$$\ln W = X\alpha + e_1 \qquad (1)$$

$$\ln W^* = Z\beta + H\delta + e_2 \qquad (2)$$

where:

lnW = log of market wage

X = vector of characteristics determining market productivity

lnW* = log of reservation wage

Z = vector of characteristics determining household productivity

H = hours of market work

e_1 and e_2 = error terms to capture unmeasurable or unobservable idiosyncratic taste elements

An underlying assumption of the model is that in equilibrium $W^* = W$ for employed individuals, whereas $W^* > W$ for those individuals who are not employed in the market. Therefore, the reservation wage for a nonemployed individual is not required to equal the wage the individual could have earned in the labor market. Rather, it signifies the wage required by the individual to make her/him indifferent between the last hour of household production and an hour of market work (Zick & Bryant, 1990).

This model also assumes that the market wage does not vary with the number of hours supplied in the market. However, the reservation wage is assumed to vary with the number of hours worked, implying that the marginal productivity of time in the household varies with the amount of time spent in household production whereas the marginal productivity in the market is invariant to hours worked (Zick & Bryant, 1990).

Since the reservation wage is unobservable, its estimation can only be derived by equating equations (1) and (2) and estimating a labor supply function:

$$H=\frac{1}{\delta}(X\alpha-Z\beta+e_1-e_2) \qquad (3)$$

After estimating equations (1) and (3), the reservation wage may be retrieved given that at least one variable in the X vector is not included in the Z vector (see Zick & Bryant, 1983 for detailed derivation of the reservation wage).

Several researchers have used this model to estimate the reservation wage (Duncan, 1992; Ferber & Green, 1985; Leppel, 1989; Pappalardo, 1987; Puang & Metzen, 1993; Zick & Bryant, 1983, 1990). Note, the model also assumes that the error terms in the criterion (probit) equation and the market wage equation are jointly normally distributed, with both means equal to zero and with a variance-covariance matrix equal to

$$=\begin{bmatrix}\sigma^2_{e1} & \sigma_{ee_1}\\ \sigma_{e1e} & 1\end{bmatrix}$$

where e and e_1 are the error terms in the probit and market wage equation respectively (Kidd, 1993).

The empirical results of the wage equation, hours of work equation, and the calculated reservation wage are presented in Table 4.

Since there is no rule provided in the literature for the selection of the identifier to be used in the derivation of the reservation wage, with the exception that it should be significant, wife's age was used as an identifier to derive the reservation wage. The estimated reservation wage was $0.38.

The restrictive nature of the assumed bivariate normality of the error terms has been criticized by some researchers (Lee, 1982; Nelson, 1984; Olsen, 1980). Abdel-Ghany, Sharpe, and Sulaiman (1995), Duncan (1992), Ferber and Green (1985), and Goldberger (1983, p. 79) found that the results arising from application of the Heckman's model are very sensitive due to departures from normality.

Table 4
Parameter Estimates for Wife's Market Wage, Hours Worked, and Calculated Reservation Wage

Independent variables	Dependent variables		
	LN (wage)	Hours	LN (Res. wage) (age used as identifier)
Constant	.410	71.369***	3.322
Age^2	-.007E-01**	.022	-.002
Husband's income		-.332E-05	-.135E-06
Non-wage family income		.215E-03	.877E-05
Number of children under age 18		.130	.005
Existence of children under age 2[a]		4.817*	.196
Education[b]			
Less than high school	-.144	7.482***	.161
Some college	.136*	-.327	.123
College graduate	.290***	-3.092	.164
Race[c]			
Black	.037	-.530	.016
Region of residence[d]			
Urban Northeast	.377***	-2.773*	.264
Urban Midwest	.116	1.767	.189
Urban South	.042	3.443*	.182
Urban West	.209**	2.143	.297
λ	.002E-01	-22.392*	
Average weekly hours		35.96	
Adjusted R^2	.16***		

[a] omitted category is "children under age 2"
[b] omitted category is "high school graduate"
[c] omitted category is "white"
[d] omitted category is "rural"

*p<.05
**p<.01
***p<.001

Kidd's Reservation Wage Approach

Kidd (1993) suggested replacing Heckman's two-step procedure by a one-step ordinary least square regression which includes the number of dependent children as an alternative proxy variable to Heckman's lambda. The number of dependent children was chosen as valid proxy for lambda because it satisfies two conditions: (1) it is highly correlated with the probability of women labor force participation, and (2) it has no a priori rationale for its inclusion in the wage equation, so that it serves to capture the essence of the omitted variable problem.

In this study, two variables related to dependent children were included in the ordinary least square wage equation; number of children under age 18, and the existence of children under age two. Table 5 presents the regression estimates of the parameters of Kidd's model. The results indicate that the number of children under age 18 variable is significant at the .01 level. This result suggests that the variable reflects the negative sample selection bias in the specification of the wage equation. Using this method, the calculated hourly reservation wage for a full-time homemaker amounted to $5.80.

Conclusions

The four different variants of the opportunity cost approach used in this study yielded different estimates of the value of household production time as might be expected. Is there a basis for evaluating which estimation method is to be preferred?

The imputed wage approach has been refuted in the literature on grounds of selection bias being embedded in selection of the sample. The potential wage approach corrects for censoring bias and yields the lower bound estimate of the estimated wage of household production time. In this study, the estimated imputed wage and potential wage were almost the same, $6.48 and $6.47 respectively, due to the fact the lambda was not significantly different from zero, indicating that there were no differences in unobservable factors between full-time homemakers and wives who were employed in the market.

Heckman's two-stage reservation wage approach has the advantage of correcting selection bias and also reflecting the wage the homemaker would place on her household production time. Whereas, the theoretical base for this method is appropriate for welfare economic analysis, its reliability as a practical measure for estimating the value of household production time has been questioned in the literature. In this study, the estimated wage reservation was $0.38, which is less than the estimated potential wage that is supposed to reflect the lower bound estimate for the wage of household production time.

Kidd's approach is a simpler method of estimating the reservation wage than the Heckman's approach. It also avoids the restrictive condition of the assumed bivariate normality of the error terms in Heckman's model. However, the use of the number of dependent children as a proxy for Heckman's lambda needs to be validated. In this study Heckman's lambda was not significantly different from zero, but the number of dependent children variable was statistically significant, indicating that there were differences in unobservable factors between full-time homemakers and wives who were employed in the market.

In general, the opportunity cost approach has limitations. This approach is used to estimate household production time of the homemaker rather than the value of the household production itself. Thus, the opportunity cost reflects one's own wage only. Household production, on the other hand, requires capital inputs and entrepreneurship in addition to the time spent by the homemaker in producing the commodities.

Table 5
Wage Regression for Wives in the Labor Force Incorporating "Number of Children Under 18" and "Existence of Children Under Age 2" Variables

Independent variables	Regression Coefficient
Constant	.251
Age	.079*
Age^2	-.092E-02***
Education^a	
Less than high school	-.129
Some college	.136*
College graduate	.273***
Race^b	
Black	.055
Region of residence^c	
Urban Northeast	.365***
Urban Midwest	.112
Urban South	.018
Urban West	.201*
Occupation^d	
Managerial and administrative	.184**
Service	-.269***
Farming, forestry, fishing	-1.718***
Precision production, craft & repair	-.132
Operators, fabricators, laborers	-.104
Self-employed	-1.379***
Industry^e	
Agriculture, forestry, fishing	.327
Construction	-.092
Manufacturing	.138
Transportation, communication, and public utilities	.139
Wholesale and retail trade	-.064
Finance, insurance, real estate	.014
Public administration	.177
Number of children under age 18	-.065**
Existence of children under age 2^f	.099
Adjusted R^2	.17***

^{a}omitted category is "high school graduate"
^{b}omitted category is "white"
^{c}omitted category is "rural"
^{d}omitted category is "technical"
^{e}omitted category is "service"
^{f}omitted category is "no children under age 2"

*p<.05
**p<.01
***p<.001

Given these limitations of the opportunity cost approach, in our judgment, the value-added approach measuring household production would be more appropriate for placing a monetary value of home produced commodities. With information about the number of hours spent by the homemaker in different productive activities one can estimate the reservation wage for his/her time. A drawback of this method, however, is that it requires collection of massive amounts of information regarding the produced commodities as well as their corresponding prices in the marketplace. But, given current technological advances in data gathering and the increased availability of information regarding prices of products, collecting data of this sort may become easier in the future. Therefore, we would strongly encourage researchers to consider using this method in the future.

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The Reservation Wage and the Value of Household Work Time: Estimates for Canada

The value of time spent in household production by Canadian women was estimated using Heckman's reservation wage procedure on data from the 1992 General Social Survey. The estimated wage rates were higher than those generated using the replacement cost and traditional opportunity cost procedures on the same data set.

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The valuation of household production time has been of continuing interest to academics and, to a lesser extent, policy makers. In Canada, estimates of the value of household work -- both in dollars and as a percentage of GDP -- have been made periodically since the 1970's. Recently Statistics Canada hosted an international conference to share expertise on measurement and valuation issues surrounding unpaid work. While conference participants were informed that developing a national system of accounts covering unpaid work is a priority for Statistics Canada, the valuation of time spent in volunteer activities and in the care of elderly relatives were also identified as critical areas during the course of the conference (Statistics Canada, 1994).

One method of valuing the time people spend in household work is the reservation wage procedure. Although this method has become quite common in the literature, to date it has not been used on Canadian data. The purpose of this research is to use the reservation wage procedure to estimate the value of time in household work for Canadian women and to compare the estimates with those obtained using other valuation methods.

Time Valuation in Canada

Valuing time in household production to correct the System of National Accounts has been of continuing interest in Canada. Since the pioneering work of Adler and Hawrylyshyn, replacement cost[2] and opportunity cost approaches have been consistently employed to estimate the value of household production to the welfare of the nation. Using the replacement cost method, household work represented 40% of the GNP in 1961 and 44% in 1971; using the opportunity cost method, 44% in 1961 and 40% in 1971 (Adler & Hawrylyshyn, 1978). Estimates for 1981 ranged between 36 and 41% of GNP (Swinamer, 1985) and for 1986, between 32 and 39% of GDP (Jackson, 1992). Most recently, Chandler (1994) estimated the value of household production to be between $210.8 and $318.8 billion dollars, or 31 to 46% of 1992 GDP, depending on the method of valuation used.[3]

Although the calculation of the gross value of household production as supplemental information to that contained in the System of National Accounts is an important research focus, these aggregate estimates of value do not illuminate decision making at the household level. At times, the replacement and opportunity costs of time for individuals have been calculated, but generation of these estimates has not been a primary focus of Canadian valuation research. Yet it is these estimates which are necessary to develop a clearer understanding of how households choose to allocate the time of their members and which could help to inform debate on a number of social policy questions.

For example, changes to the retirement system in general and to the Canada Pension Plan (CPP) in particular is one issue that is moving to the fore of the national agenda. Currently, those who spend their working years engaged solely in household work are not covered by the CPP and cannot collect benefits at the age of 65 as can their employed counterparts. A better understanding of time allocation choices and the value of work performed in the home could promote policy changes that would better serve all workers regardless of whether they worked in the labour market or in home production.

An additional challenge is to expand the knowledge of time allocation beyond the leisure-household work-market work choice to improve understanding of time allocation to activities such as care of elderly relatives and volunteer activities. As the elderly proportion of the population increases, it will become increasingly important to understand the value of time spent by families in the care of their elderly members (Statistics Canada, 1994). Further, as provincial and federal governments are less able or willing to fund social programs, services cut by governments may fall to the volunteer sector. In order to inform public policy and to assist families in their time allocation decisions, researchers will need to do a better job of modelling these individual-level decisions.

Over the past fifteen years Heckman's (1976) reservation wage method of valuing household work time has become commonplace in published research in human ecology. The reservation wage is an opportunity cost method of valuing time in household production and as such shares an important advantage of opportunity cost over replacement cost approaches: it prices time at the value households used in their decision making. Opportunity cost methods are, then, appropriate when the purpose of estimating value is to examine the time allocation decisions of households.

The reservation wage is the wage at which an individual is indifferent between home and market work. A wage higher than the reservation wage is required to overcome a nonemployed individual's "reservations" about market work and draw him or her into paid employment. For those in the labour market, the reservation wage is theoretically equal to their market wage rate because these individuals have accepted a market wage rate as the value of their time; for those not in the labour market, the reservation wage is the wage at which an individual is indifferent between time in household work and time in market work.

The reservation wage technique makes it possible to estimate the opportunity cost of time for nonlabour force participants from wage and hours data on labour market participants while accounting for the self-selection bias inherent in this estimation. This bias arises in the estimation of the value of household work time because market wages are observed only for employed women (Heckman, 1979). To date, reservation wage estimates have been calculated on data from the United States (Duncan, 1992, 1993; Zick & Bryant, 1983, 1990) and Malaysia (Abdel-Ghany, Sharpe, & Sulaiman, 1995; Puang & Metzen, 1993).

Despite the advantages embodied in the reservation wage procedure, current research indicates that reservation wage models are exceedingly sensitive to the specification of the estimating equations (Abdel-Ghany, Sharpe, & Sulaiman, 1995; Duncan, 1992, 1993). Recent work by Abdel-Ghany, Sharpe, & Sulaiman (1995) has documented extreme differences leading the researchers to conclude that the method is a poor choice for use in developing nations. Stolzenberg and Relles (1990) argue that the Heckman procedure should be used with caution but suggest that it may be appropriate when theoretically justified, the sample is large, and the assumption of normality is reasonable. Given that these criteria hold here, the Heckman procedure is an suitable analytical tool for this research.

Method

Data

Data from the 1992 General Social Survey were used to estimate the value of time spent in household production for Canadian women. The data were collected via telephone interviews conducted between January and December, 1992. Random digit dialling was used to select a stratified sample of 12,765 households. The sample was drawn from the ten provinces; the Yukon and Northwest Territories were not included in the sample. For each household, a household member aged 15 years or older was randomly selected to respond to the survey. Of the sampled households, 9,815 responses were obtained (a response rate of 77%).

For the purpose of this research, the sample was confined to married or cohabiting women, whose husbands were employed. These restrictions facilitate comparisons with other reservation wage estimates and, in the case of the elimination of unemployed husbands, removes the additional statistical complication of needing to correct for the bias presented by unemployed spouses. The sample consisted of 1,353 women, of whom 812 (60%) were employed and 541 (40%) were not. All the analyses reported here have been weighted according to Statistics Canada weighting formulas in order to account for unequal sample selection probabilities.

Empirical Specification

The derivation of the reservation wage model is well-established and is not delineated here. Readers are referred to Kinsey (1986) and Zick and Bryant (1983) for exposition of the model. Briefly, the theoretical model consists of three equations which describe the wage rate (**W**), the reservation wage rate (**W***), and the hours of market work (**H**):

$$\mathbf{W} = \mathbf{X}\alpha + \mathbf{e}_1 \tag{1}$$

$$\mathbf{W^*} = \mathbf{Z}\beta + \mathbf{H}\delta + \mathbf{e}_2 \tag{2}$$

$$\mathbf{H} = \frac{1}{\delta}(\mathbf{X}\alpha - \mathbf{Z}\beta + \mathbf{e}_1 - \mathbf{e}_2). \tag{3}$$

where **X** represents a vector of labour market characteristics and **Z** represents a vector of household productivity characteristics.

The first step in the estimating procedure is to correct for self-selection bias by estimating a probit equation for the probability of labour force participation. This equation is estimated over the entire sample and the sample correction factor (the Inverse Mills ratio) is generated from the estimates. This correction factor is included as a regressor in the equations comprising the second step of the process, permitting estimation of these equations on the labour force participants alone. Here the labour force participation equation is specified as:

$$\text{LFP} = \text{AGE} + \text{AGE2} + \text{HIGHSC} + \text{COLLEGE} + \text{HEALTHLT} + \text{SPMKTWK} + \text{HHINC} + \text{HOMEOWN} + \text{HHSIZE} + \text{YKIDLT5}. \qquad (4)$$

In step two, the real wage (1) and reservation wage (2) equations are specified as

$$\text{LNWRATE} = a_0 + a_1\text{AGE} + a_2\text{AGE2} + a_3\text{HIGHSC} + a_4\text{COLLEGE} + a_5\text{HEALTHLT} + a_6\text{LAMBDA} \qquad (5)$$

and

$$\text{LNWSTAR} = b_0 + b_1\text{AGE} + b_2\text{AGE2} + b_3\text{HIGHSC} + b_4\text{COLLEGE} + b_5\text{SPMKTWK} + b_6\text{HHINC} \; b_7\text{HOMEOWN} + b_8\text{HHSIZE} + b_9\text{YKIDLT5} + b_{10}\text{HRSMKTWK}. \qquad (6)$$

However, the reservation wage is not observed in the data. Since we assume that **W** = **W*** for employed women, equations (5) and (6) can be set equal to each other and solved for hours of market work, which is observed in the data. The real wage equation (5) and the resulting hours equation

$$\text{HRSMKTWK} = c_0 + c_1\text{AGE} + c_2\text{AGE2} + c_3\text{HIGHSC} + c_4\text{COLLEGE} + c_5\text{HEALTHLT} \;\; c_6\text{SPMKTWK} + c_7\text{HHINC} + c_8\text{HOMEOWN} + c_9\text{HHSIZE} + c_{10}\text{YKIDLT5} + c_{11}\text{LAMBDA} \qquad (7)$$

can be estimated via OLS and the parameters of **W*** retrieved, providing that at least one variable present in **X** is not also present in **Z**.[4]

Definitions and descriptive statistics for all variables are presented in Table 1. The variables comprising the empirical equations were chosen in accord with human capital theory. The analysis was limited both by a lack of variables in the data set that could be used to control for labour market characteristics and by the measurement of the sociodemographic variables that were present. Measurement of the dependent variables was, however, straightforward. Respondents were asked to recall the amount of time spent in market work during the previous week. The wage rate was calculated from information provided by respondents on income and pay periods according to formulas recommended by Statistics Canada.

Table 1
Definitions and Descriptive Statistics of Variables Used in the Model

Variable	Definition	Mean[a] (std. dev.)
Dependent variables		
LFP	Labour force participation of wife 0 = No, 1 = Yes	0.59 (0.49)
LNWRATE[b]	Natural log of wage rate	2.51 (0.47)
HRSMKTWK[b]	Weekly hours worked in market by wife	35.08 (11.25)
Independent variables		
AGE	Wife's age	37.49 (10.09)
AGE2	Wife's age squared	1507.50 (803.78)
LESSHSCH	Less than Grade 12 education (omitted) 0 = No, 1 = Yes	0.16 (0.37)
HIGHSC	Grade 12 or more (non-academic training or some college) 0 = No, 1 = Yes	0.42 (0.49)
COLLEGE	College degree or more 0 = No, 1 = Yes	0.42 (0.49)
HEALTHLT	Wife has a long term physical or health problem 0 = No, 1 = Yes	0.12 (0.32)
SPMKTWK	Weekly hours worked in market by spouse	44.35 (13.49)
HHINC	Household income	51,474.00 (21,682.00)
HOMEOWN	Dwelling owned by a member of the household 0 = No, 1 = Yes	0.77 (0.42)
HHSIZE	Number of people living in household	3.43 (1.16)
YKIDLT5	Child less than 5 years of age present in household 0 = No, 1 = Yes	0.27 (0.44)
LAMBDA	Sample selection correction factor	

Note. N = 1353.
[a] Means reported for noncontinuous variables represent the proportion of the sample with a value of 1. [b] For employed wives only.

Results

The coefficients resulting from the estimation of the wage and hours equations are presented in Table 2 but will not be formally discussed.

The value of nonemployed women's time in household work as estimated from the reservation wage equation is compared to the values derived by Chandler (1994) using the replacement cost and opportunity cost methods in Table 3. Of the methods, the reservation wage procedure provides the highest estimate of the value of household work time regardless of whether or not the wife was employed. For nonemployed wives, the value of household work time is $12.48 per hour; for the employed, $13.70.

The replacement cost method provides a lower value of time ($11.05) than the reservation wage procedure, a result in accord with previous research results (Zick & Bryant, 1983). The replacement cost method values household production time at the cost to the household to replace the wife's household time with market substitutes but does not consider the intrinsic value the household places on her time or the costs she would incur in entering the labour market. The result here lends weight to the argument that the replacement cost method understates the value of the wife's household production time to the household.

Because the reservation wage estimates were derived only for married women with employed husbands, whereas Chandler's estimates represent average opportunity costs for all women in the General Social Survey, the opportunity cost estimates are not strictly comparable although they do provide useful benchmarks. The most appropriate comparison is between the gross opportunity cost and the reservation wage values as the information necessary to net out the effect of taxes was not available for use in estimating the reservation wage. Here, the reservation wage method values the household work time of nonemployed wives at $1.24 more per hour than the $11.24 value imputed by the gross opportunity cost method.

Table 2

Parameter Estimates for Wife's Market Wage and Hours of Market Work, and Calculated Coefficients for the Reservation Wage Equation.

	Independent variables		
Dependent variables	LNWRATE (Std err.)	HRSMKTWK (Std err.)	LNWSTAR
AGE	0.030* (0.013)	1.039 (0.616)	0.020
AGE2	-2.6E-4 (1.7E-4)	-0.017 (0.009)	-8.8E-5
HIGHSC	0.140* (0.062)	0.294 (1.993)	0.137
COLLEGE	0.381* (0.065)	2.012 (2.732)	0.361
HEALTHLT	-0.013 (0.058)	-1.322 (2.134)	–
SPMKTWK	–	0.030 (0.041)	-3.0E-4
HHINC	–	2.5E-4* (8.1E-5)	-2.4E-6
HOMEOWN	–	-2.944* (1.287)	0.029
HHSIZE	–	-2.417* (0.966)	0.024
YKIDLT5	–	-7.413* (3.494)	0.073
HRSMKTWK	–	–	0.010
LAMBDA	-0.473* (0.072)	12.429 (9.627)	–
INTERCEPT	1.811* (0.264)	10.217 (14.395)	1.710
Adj R^2	.27 $F_{(6,564)} = 35.52$	.09 $F_{(11,599)} = 6.16$	

Note. n = 812.
*p < .05.

Conclusions

The reservation wage estimates derived here provide additional documentary evidence of the value of household work time on a relatively recent set of Canadian data. When the results are considered in concert with Chandler's (1994) estimates on the same data set, the research also confirms earlier findings on the relative magnitude of household work time values imputed by replacement and reservation cost methods. Zick and Bryant (1983) compared reservation wage and replacement cost estimates of the value of household time for New York wives in two-parent two-child families and concluded that the replacement cost method underestimates the value of the wife's time in household production to the household. That result is corroborated here.

There was little evidence of sensitivity to model specification with the data, marking this study as an aberration among recent research. The reservation wage

Table 3

Average Value of Wife's time in Household Work as Estimated by Reservation Wage, Opportunity Cost, and Replacement Cost Methods.[a]

Method	Wage Rate (dollars)
Reservation wage	
Nonemployed women	12.48
Employed women	13.70
Gross opportunity cost	11.24
Net opportunity cost	7.94
Replacement cost	11.05

Note. Replacement and opportunity costs were derived by Chandler (1994) using data from the 1992 General Social Survey, the 1991 census, and The National Finances.

procedure may be a useful technique for valuing household work time in Canada and is worthy of further exploration despite it's potential pitfalls. In addition, Abdel-Ghany, Sharpe, & Sulaiman (1995) have explored a new reservation wage estimating procedure suggested by Leonesio which they found to be an improvement over the Heckman procedure. It would be instructive to use the Leonesio technique on this sample to discover how the Heckman and Leonesio procedures compare on Canadian data.

Finally, although opportunity cost methods are theoretically justified, one recognized drawback to these methods of valuing time is the assumption that the value of time in all activities is equal. Kinsey (1986) has noted that this is not likely to be the case and that allowing the value of time to vary with the activity is needed in modelling time allocation decisions. Continued work in this area is imperative if the analysis of time allocation is to extend beyond the allocation to household work, market work, and leisure.

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Endnotes

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2. The replacement (or market) cost method most commonly used in Canadian valuation research measures the value of household production as the sum of the products of time spent in the activities comprising household production and the average hourly wages of people performing similar work in the labour market.
3. In 1992, the average exchange rate for the Canadian dollar was 1.2083 US.
4. HEALTHLT is the variable present in **X**, but not **Z**, which permits identification. The coefficients for equation (6) are calculated as follows: $\mathbf{b_0 = a_0 - c_0{*}b_{10}}$, $\mathbf{b_6 = -c_7{*}b_{10}}$, $\mathbf{b_1 = a_1 - c_1{*}b_{10}}$, $\mathbf{b_7 = -c_8{*}b_{10}}$, $\mathbf{b_2 = a_2 - c_2{*}b_{10}}$, $\mathbf{b_8 = -c_9{*}b_{10}}$, $\mathbf{b_3 = a_3 - c_3{*}b_{10}}$, $\mathbf{b_9 = -c_{10}{*}b_{10}}$, $\mathbf{b_4 = a_4 - c_4{*}b_{10}}$, $\mathbf{b_{10} = a_5/c_5}$, $\mathbf{b_5 = -c_6{*}b_{10}}$

The Value of Unpaid Work in the System of National Income Accounts: A Satellite Account Approach

This paper reports work on establishing a national satellite account measure of household production's monetary value and related measurement issues. The model is one that incorporates a satellite measure of household production using input valuation. This measure is unique because it incorporates not only measures of time value but also consumer expenditures in as much as they are also inputs to separate household "industries" that when taken together comprise the total household production process.

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Introduction

In the brief time I spend with you today, I would challenge you to consider the private and social value of unpaid work and hope to convince you of the need to include the value of unpaid work in the system of national income accounts. National income is a measure of the money value of the goods and services available to a nation from economic activity. Theoretically, it is a measurement of the production boundary of an economy. Practically, it may be interpreted as an indicator of a nation's economic well-being. The United Nations agrees upon international standards by which national income is measured. Because the value of production is typically based on market prices, by its very definition, current measures of national income presume that the significance of a thing lay not in its nature, but in its price. When used as a yard stick for measuring well-being, it implies that every item of commerce adds to our nation's welfare merely because it was produced and purchased.

Unpaid Work and National Income Accounts

When I refer to unpaid or nonmarket work I include: unpaid activities by men and women for themselves, for other household members, or for the community and which (activities) may be replaced by market goods or services. The stipulation of including only activities that could be accomplished by hiring a person from the market and outside the household fulfills what has come to be known as the "third person" criterion of unpaid work (Hawrylyshyn, 1976). The domains of unpaid economic activities. It includes unpaid work activities for both the family and community. Tradable activities are those activities that meet the third person criteria of unpaid economic activity. Recipient only activities, are non-tradable consumption activities that cannot be received for another. Examples include exercise, eating, and leisure activities. Prior to 1993, no unpaid activities were recognized by the United Nations' System of National Accounts (SNA's). In 1993 the SNA was revised to include non-market goods production for family use.

So, what are the implications if tradable household maintenance activities are excluded from the SNA? What makes the difference whether our national accounts measure the value of unpaid work activities such as, raising children? From a theoretical perspective, economists should be concerned about the omission of unpaid work from measures of SNA if we believe that SNAs reflect the sum of all productive activity in a nation. If we wish to concern ourselves with such a measure of productivity, then inclusion of an activity should not be contingent upon its payment.

From an international comparative perspective, when internationally agreed upon measures of SNA exclude the value of unpaid work, lesser developed countries whose economies rely heavily on informal markets for trade, appear to be much less prosperous than their developed country counterparts. The 1993 SNA revision to include non-market production of certain goods (especially subsistence agrarian activities) was intended, in part, to remedy this problem.

By excluding unpaid work in the SNA we risk erroneously attributing substitutions from unpaid to paid activities as growth in the economy's production frontier. Consider this potential bias in the context of the increase in women's labor force participation rates in the United States. The percentage change in women's labor force participation rates when compared to the percentage change in either, total personal consumption, non-durable good spending, and services in the US over the last 25 years reveals strikingly similar trends. Is it possible that American's recent economic growth and prosperity, as measured by GDP, is partly attribute to women's increased labor force participation?

Well, it's possible inasmuch as when parents remain out of the paid labor force and are the primary unpaid care providers for their children, we attribute no value to their contributions in economic accounts. But if they enter the labor force and hire child care, the value of that service (as measured by the price paid) is immediately counted in GDP. The danger of ignoring unpaid work in national accounts is that we may err and attribute such production substitution effects to real economic growth. Current measures of GDP have the potential of being dangerously false indicators of economic growth and well-being. If the quality of market purchased child care services are equivalent to the home produced services, the GDP "growth" that results from our substituting away from parental provided care represents simply a one-to-one trade off, and at worst, no real growth. However, the scientific evidence on these issues is mixed and social scientists are a long way from reaching consensus about whether market purchased goods (like meals) and services (like day care) are on a par with the home produced goods and services they replace. If indeed market purchased goods are inferior to the home produced ones they replace, then not only is our domestic product not increasing, we are really experiencing a net decline in production.

Another example of why it is important that we assign an economic value to unpaid work relates to changes in civic and volunteer activities. When men and women spend more time in paid work, they also have less time available for charitable and philanthropic work. For example, recent estimates (Brown & Lankford) indicate that when women become full time labor force participants, their civic volunteer work decreases by about 39% and numerous other studies have found that their unpaid work in the home decreases by about a third. As fewer people are willing and able to give of their time to charities in aid of the poor, like the example of unpaid child care, that work must be turned over to others. In the case of social assistance, if services are to be maintained, it is the tax payer who is left to provide the direct cost of these services. As social assistance payments become an ever greater percentage of the tax dollar, we realize how much in years gone by the value of charitable work was underestimated.

Previous Proposals to Include Unpaid Work in SNA's

Robert Eisner, is one of several contemporary authors who has written on the subject of including unpaid work in national income accounts. In his book The Total Incomes System of Accounts (1989) he reviewed the Extended Income Accounts literature and various proposals to measure not only unpaid household production, but also unpaid government services. These Extended Income Accounts (EIA), just as their names imply, propose leaving intact the central accounting procedures of income accounts, and simply "extending" the accountancies to include additional measures. In addition to his own work Eisner reviewed the EIA proposals of Jorgenson & Framaeni (1987), Ruggles and Ruggles (1982), Zolatas (1981), Nordhaus & Tobin (1972). A difference among the authors is which of the unpaid activities to include in their model. Some propose including only activities that meet the third person criterion, while others would also include recipient only activities.

A central framework of a System of National Accounts like Extended Income Accounts is advantageous in that it represents an integrated accounting structure that is exhaustive and consistent. However, it is limited by its inflexibility and inability to accommodate alternative measures simultaneously. In contrast to the EIA genre of accountantcies, are proposals to establish satellite measures of unpaid work.

Satellite accounts stress the need to expand the analytical capacity of national accounting for selected areas of social concern in a flexible manner without disrupting the central system of accounting. According to the United Nations Secretariat (Provisional draft 21 July 1992), "Revised System of National Accounts" typically satellite accounts are adopted to allow for:

- the provisions of additional information on particular social concerns of a function or cross-sector nature,
- the use of complementary or alternative concepts, including the use of alternative classification schemes when needed to introduce additional dimensions to the conceptual framework of national account,
- extended coverage of costs and benefits of human activity

further analysis of data by means of relevant indicators and aggregates linkage of physical data sources and analysis to the monetary accounting system.

The UN, further recommended the use of satellite accounts to establish international standards to measure the boundary of production that would include household work and voluntary work, arguing that these additional dimensions represent valuable enrichments of the analytical power of the national accounting approach.

Suggested satellite methods to impute values to non-market household production generally can be categorized in one of two ways:

i) an output approach consisting of assigning a money value to total household production output. By this methodology the value of unpaid labor to the production process is determined by subtracting intermediate consumption goods cost from the value of total household production, or

ii) an input approach consisting of calculating the cost of intermediate consumption goods and adding to that the imputed money value of unpaid labor inputs. Fixed capital investments may also be added to such an estimate.

To the extent that many researchers are interested in ensuring that satellite accountancies, like national income accounts, capture a measure of value added. It is generally agreed that ideally, we would prefer measures of household production output, rather than ascribing an arguably, arbitrary value to time use to measure the contribution of labor. Chadeau (1992) has used the output methodology, that requires a market value be assigned to all goods and services produced in the home. Since one must have complete data on quantities and quality of goods and services produced, few others have adopted this valuation technique. Such data collection is complex, expensive and fraught with limitations. However, when output measures are available, the value of time is calculated as the difference between that value and direct related intermediate expenditures.

Proposed Methodology

The model that I want to report to you today is a satellite measure of household production using input valuation. In this measure I use an input/output (I/O) model first proposed by Ironmonger (1989), that is unique because it incorporates not only measures of time value but also consumer expenditures as inputs to household "industries" that when taken together comprise the complete household production process. Ironmomger's model is intriguing not only because of its conceptual consistency with paid industry's measurement of labor and capital's value added, but also because of its consistency with Gary Becker's conceptual model of household production and the way households combine time and market purchased goods to generate home produced goods and services. There are several steps involved with building such a model. They include

1) identification of household industries,
2) measurement of household time use in each household industry,
3) valuation of unpaid work, and
4) measurement of household expenditures for goods and services used in each household industry production process.

The first step involves identification of unpaid work industries. What is an unpaid industry? Like paid work, we can classify unpaid work by the type of goods or services produced. In this analysis the industry classifications of Ironmomger will be used. They include the unpaid industries of:

1) home meal preparation,
2) laundry and cleaning,
3) repairs and maintenance,
4) other household work,
5) education and community work,
6) child care,
7) shopping, and
8) gardening.

Robinson's 1985 survey, American's Use of Time (AUT) was used to measure time use. This was the last year a complete U.S. national time budget survey was conducted. The 10 year old data reflect how woefully behind the rest of the world we are in this area of research. In 1992 time use data were collected in: Australia, Austria, Canada, Germany, and Israel. And in the past 5 years surveys were conducted by the statistical offices of Bulgaria, Finland France, Hungary, Italy, Norway, Sweden.

The AUT data have not been used in previous EIA studies (ICPSR 1975 data are most commonly used with some using the 1981 panel follow-up). They were first released in 1993 to the Inter-university Consortium for Political and Social Research (ICPSR) for public use. The AUT data include full day accounts of time broken down into 90 categories, consistent with Multinational Time Budget Research Project Guidelines (Szalai 1972).

Next step in model development is establishing a means to value unpaid time inputs to the household industries. Early attempts to estimate household production's value, like those developed by Gager and Walker (1980), involved assigning a monetary value to time spent in different unpaid productive activities, like meal preparation, dish washing, laundry etc. Generally, three different methodologies have been used to do this:

1) the **service replacement cost method**; a calculation of the cost to replace each separate service,
2) the **household technician replacement cost method**; a valuation of total household work hours at the going wage rate paid to a housekeeper, or

3) the **market wage rate (opportunity cost) method**; a valuation of each hour of house work a family member does at that person's actual or potential wage rate.

Service Replacement Cost Method

The market alternative cost method matches household tasks -- cooking, cleaning, child care, etc. -- with the dollar value a family would have to pay for such services in the market place. For example, if a family member spends one hour each day washing dishes, then that hour would be valued at the going hourly wage for a dishwasher. Similarly, a price tag would be attached to each activity that family members engages in -- cleaning, laundering, bookkeeping, counseling, etc. Such wage information may be available from state departments of labor. Otherwise national average wage information is reported by the U.S. Bureau of Labor Statistics. However, many families find that either market purchased alternatives to services like child care are far from perfect substitutes or market alternatives are not available in their geographic area. Further it's difficult to compute one value for an hour spent carrying out several simultaneous tasks. Consider, for example, the problems fraught with valuing an hour of time spent by a parent holding a baby while balancing the check book, monitoring dinner cooking, laundry and a 7-year-old doing homework.

The Household Technician Replacement Method

The second approach, the household technician replacement cost method, involves calculating time spent by family members in home production and valuing time at the market wage paid to a housekeeper with comparable skills. This approach addresses the problem of valuing simultaneous activities, but it too has drawbacks since it excludes the management component of house work -- the skill most highly valued in the market place. For example, even if a housekeeper is hired to complete household chores, the employer must still plan, supervise and evaluate the work. Neither that amount of time nor its value is included in either the household technician replacement or the service replacement methodology.

The Market Wage Rate Cost Method

The concept of opportunity cost underlies the market wage rate cost method. An opportunity cost represents the value of the second best activity precluded by engaging in another. The market wage rate cost method presumes that the opportunity cost associated with home production is ones market wage rate. That is, the opportunity cost of spending an hour in home production is represented by the wage that one could have earned in the paid labor force. The wage rate is thus assumed to represent the best alternative valuation of what a family member gives up to do house work, or the "cost" of home production.

The drawback of this method is that it understates the value of household time. Clearly, the household member must value the work that they do in the home at least as much, if not more, than their foregone wage. Otherwise they would work in the paid labor force and purchase substitute goods and services from the market. For employed household members the valuation is straightforward. Each hour of house work is valued at the net hourly wage rate, or take-home pay. Ones net hourly wage rate equals the hourly wage on the job minus variable employment costs like taxes. However, if one is not employed, valuing an hour of home production by this method is more difficult. One must assess earnings capacity assuming employment options exist. One valuation approach is assigning the after-tax wage rate of a labor force participant with similar characteristics and qualifications (age, sex, occupation, education, etc.) to an unemployed household member.

There have been numerous attempts at deriving population estimates of unpaid work's monetary value and comparing that value to paid production activity measures like GDP. For example, Murphy (1982) used various methodologies to value household production time and compared both his and previous authors findings with GNP. His estimates of the value of unpaid work in the household to GNP range from 26-47%. In this model, like Ironmonger (1989), I have used the average market wage for men and women in my model and will come back and revisit implications of that decision in the discussion section of this paper.

Finally, to measure household expenditures for goods and services used in each household industry I used unpublished data tables produced by the U.S. Bureau of Labor Statistics 1985 Consumer Expenditure Survey (Interview) data. These tables report average expenditures by detailed categories. Each detailed expenditure category was considered for allocation to one of the household industries, using standards first applied by Ironmonger.

Results

The household production portion of the input table includes time and intermediate consumption expenditures. The entire table includes paid work/human capital investment activities and leisure activities.[2] Every minute of time and dollar of household spending is allocated to an element of the table. First, lets examine the amount of time allocated to each of the household industries.

To put the amount of effort in perspective, Manufacturing, is the largest conventional paid industry in the U.S. In 1985 American workers spent 40.6 billion hours working at manufacturing jobs. However, hours spent in the home meal industry easily exceeded that with Americans spending 51.5 billion hours per year in such activities. Women alone account for 41.1 billion of those hours and thus spend more time preparing meals each year than all the time that paid workers spent in manufacturing jobs. Americans spend about the same amount of time in the household laundry and cleaning industry as do all American's who work in Manufacturing (40.6 billion).

The amount of time spent in the home child care industry is slightly less than all the time spent by Americans working in Retail, the third largest paid industry (25 vs 26 billion hrs). The amount of time spent in the household repair and maintenance industry, is slightly more than all the time spent by Americans in the paid industry of construction.

Volunteer civic and community activities rank 4th (19.6 billion hours) among the paid industries, behind Retail trade, but exceeds the time spent by Americans in wholesale trade, finance and real estate, transportation and public utilities, construction, and mining. Further, American women's total unpaid work efforts alone exceed by about 5 billion hours per year, the total amount of time spent by ALL workers in ALL non-agricultural, private paid industries. While economists bite their nails making predictions about the nation's welfare based on estimates of hours worked in paid industries, this huge amount of productive, albeit unpaid work, is all but invisible in our economic accounts.

American's overall paid versus unpaid work efforts are very similar to those of adults in other countries. American's total average hours worked is similar to that of our Canadian counterparts, with each averaging 47.4 and 47.5, respectively.

Using the average wage for all full time workers to value unpaid time inputs to the household industries, the total value attributable to all household industries amounts to about 67% of the 1985 GDP. The value of time inputs alone represent about 52% of GDP. As discussed earlier, Murphy (1982) points out that these results are sensitive to the valuation technique chosen. In this analysis we used the average population wage rate, rather than separate wages for men versus women or minimum wage. Either of those estimates would result in lower estimated time values.

Although household expenditures are already included in NIA's, my I/O model indicates that about 37% of those goods and services that we currently count as final consumption, indeed undergo another value added production process before finally being consumed by households. The largest portion of those expenditures are allocated to the Home Meal industry (26%).

Several other nations have used the satellite technique proposed here to assess the value of unpaid industries in their own countries. To derive unitless measures from which to compare relative time versus intermediate consumption inputs to household industries across countries (extracting from currency and other differences) I/O coefficients were calculated. All inputs to the household production processes are classified as falling into one of six categories: 1) materials, 2) services, 3) energy, 4) equipment, 5) housing, and 6) labor and calculated as a percentage of the total input value. Comparisons of coefficients for the U.S. with other countries again reveal striking similarities across countries.

I hope that I have been able to convince you, not only of the importance of including the value of unpaid work in NIA's, but also of the versatility of adopting a satellite measurement technique to include the total value of production in household industries. The satellite measure is preferable over an extended income accountancy since it would measure both the value of unpaid work and intermediate consumption whose value is hidden within total expenditure/consumption measures used in our standard accountancies. Through such an accountancy, we could monitor household production substitution effects as they occurred throughout the business cycle and we would have a better handle on whether nominal growth in GDP was measuring real economic growth in productive activity or rather such substitutions.

There is an unquestionable need for further research in this area. Although there remain important questions that we can address with existing data, there is a critical need for contemporary national household time use data. Although the U.S. government collects extensive expenditure data to better understand how households allocate income to meet basic needs, it has thus far failed to recognize the urgent need to better understand household time allocation questions and the implications of those decisions have on the nation's economic well-being. It is only when the myopia with which we currently view economic activity within our economy is corrected, that we can see the full spectrum value added production in our society.

Acknowledgements

I would like to express appreciation to Soye You for expert research assistance.

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Endnotes

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Question Wording Experiments: An Introduction

Public opinion researchers often measure the level of consumer concern about product safety, and other market place issues. Many of these studies use a standard question format, i.e., the respondent is asked "How concerned are you about . . .?" A series of experiments conducted at Penn State have found that many respondents overstate their concern because they have the impression they "should" be concerned about the issue. This paper summarizes the results of these wording experiments.

Rex H. Warland, The Pennsylvania State University[1]

Consumer and public opinion researchers frequently become involved in examining the public's concerns about product safety and other market place issues. These researchers seek both to determine the level of concern with particular issues and the characteristics of those who are most concerned. These measures frequently are used in establishing public policy priorities. This use of concern measures has become more frequent in recent years, making accurate measurements of public concerns more and more important.

Over the past five years, my colleagues and I have been conducting a series of studies of how the working of survey questions influence the responses given by the public. Our central focus has been survey questions that measure consumer "concerns." During this session, we will present some of our findings and suggest how these results may be applicable to future studies of public concerns. My presentation will briefly describe the research tradition of response effects studies and outline our research program. Robert Herrmann and Arthur Sterngold will present some of the major findings of our studies and offer suggestions concerning how research may more accurately measure public concerns.

Question Wording Experiments

Question wording experiments have been conducted since the 1940s. However, the major thrust of this research tradition began in the early 1980s with the publication of "Questions and Answers in Attitude Surveys" by Schuman and Presser (1981). This seminal book has lead to an explosion of research which continues to the present.

The methodological tool that is most widely used by those who conduct research on question wording is the split-ballot experiment or between-subjects experiment. The total sample is randomly divided into two or more subsamples, each of which is administered one form of a question. The responses of the subsamples are compared to determine if the univariate or marginal distribution of the experimental groups differ. These differences are often referred to as response effects, i.e., the responses given by those interviewed are influenced by the wording of the question. In addition to question wording, other response effects include question form and question context. Our current research program is limited to question wording, although we have also conducted question order experiments in the past (Sterngold, 1991).

Over the last 15 years, a number of studies have clearly demonstrated that those who respond to questions on surveys are indeed influenced by question wording. Schuman and Presser (1981) have explained these findings by suggesting that once respondents agree to be interviewed, they go along with the "rules of the game" imposed by the interviewer and the question formate. Respondents "accept the framework of questions and try earnestly to work within that framework" (Schuman & Presser 1981, p. 299).

The Penn State Question Wording Experiments

Our interest in question wording experiments began when be became involved in food safety and environmental studies. As far as we know, product safety wording experiments have seldom been conducted in the past. We became concerned about the problem of response effects when we conducted our first pretest of a food safety survey. Using the standard question format, we asked our respondents, "How concerned are you about pesticides and other chemicals that may be on the foods you eat?" A number of those interviewed responded by saying, "I don't know much about that, but I really should be concerned. Put me down as very concerned."

It became apparent that many respondents knew little or nothing about the food safety issues, but were willing to provide a response rather than say they didn't know enough to respond. It also was apparent that many respondents were influenced by the question wording, namely the phrase "How concerned are you about . . ." Those responding may have had the impression they "should" be concerned about the food safety hazard.

The standard interview format for survey questions does not allow the interviewer to establish whether a line of questioning is relevant to the respondent (Suchman & Jordan, 1990). It is not surprising that many respondents who were interviewed for our pretest were not aware of food safety issues. Hoban, Woodrum and Czaja (1992) and Lee (1989) have argued that the public has little understanding of biotechnology and food safety. Public concerns about food safety have been referred to by Lee (1989) as "food neophobia." Lee (1989) has suggested that the public fears concerning food safety are an outgrowth of a lack of experience with growing food, limited knowledge of chemistry and biology, fear of uncertainty, and an inadequate understanding of statistics and mathematics.

On what basis do respondents answer questions about issues they know little about? Schuman and Presser (1981) have argued that often respondents who are uninformed about an issue base their answer on underlying general dispositions. These respondents construct answers about a particular issue referred to in the question by drawing on an underlying disposition not specific to the issue but vaguely related to it. Unfortunately many researchers mistake these type of answers as "informed opinions."

Standard degree-of-concern questions (e.g., "How concerned are you about . . .") often contain presuppositions. Studies of the social uses of language indicates that these types of questions contain unstated assumptions about their respondents (Clark, 1985; Luch & Thomas, 1990). The wording of the question may give the respondent the impression that they "should" be concerned about the issue.

We came to the conclusion that we needed to restructure our food safety concern questions to 1) identify those respondents who were familiar with the food safety hazard, and 2) not encourage respondents to say they were concerned about the food safety issue. We developed two filter questions to precede the degree-of-concern question to more accurately measure consumer concerns. The concern filter question asked, "Are you concerned about . . . ?" The awareness filter question asked, "Have you heard about any health problems that may be caused by . . . ?" These filter questions were incorporated into a series of split-ballot experiments to determine what differences and improvements might be associated with these changes in question wording. The experiments were included in three studies which are described below.

The 1991 Study

In 1991, we embedded a split-ballot experiment in a national random digit dialing telephone survey of 1206 adults. The survey asked a wide range of questions about people's dairy product consumption patterns and other food-related attitudes and behaviors. Four food issues were used in the experiment: pesticides, bacteria, animal rights, and BST. Those interviewed were randomly assigned to one of two experiments concerning the question wording. Part of the respondents were asked the standard-degree-of-concern question, e.g., "How concerned are you about getting food poisoning from bacteria on meat or chicken you buy at the supermarket?" The response choices were "very concerned, somewhat concerned, a little concerned, or not concerned." The rest of the respondents were first asked a concern filter question, "Are you concerned about . . .?" (yes/no). If they indicated they were concerned, they were then asked to indicate their degree-of-concern ("very, somewhat, or a little").

For all four food issues, those who were asked the concern filter questions were twice as likely to say they were not concerned about the food issue than those who answered the standard degree-of-concern question (Sterngold, Warland & Herrmann, 1994). Our interpretation is that standard degree-of-concern items may be leading questions about issues. We also have suggested that the concern filter may help solve this problem (Sterngold, Warland & Herrmann, 1994).

The 1994 Study

Our 1994 study included tests of both the concern filter and an awareness filter. We conducted a national random digit dialing telephone survey of 1000 adult household members in May and June of 1994. Those interviewed were asked about how concerned they were about eight food safety issues: pesticides, Salmonella, Listeria, BST, additive and preservatives, undercooked hamburger, chemicals in water, and a fictitious hazard IMS.

The respondents were randomly assigned to four subsamples. The question sequence, using Salmonella as an example, for each of the four groups is described in Table 1. Those randomly assigned to Experiment 1 were asked the standard degree-of-concern question, i.e., no filters. For each issue, the response choices read by the interviewer were, "very concerned, somewhat concerned, a little concerned, or not concerned about it." The interviewers were instructed to accept "Don't know" answers if volunteered by the respondents.

The second experimental group was first asked a concern filter question, "Are you concerned about . . .?" (Table 1). Those respondents who answered "Concerned" were then asked a follow-up degree-of-concern question. The follow-up question offered the same response categories as the standard form question of Experiment 1, except the "not concerned about it" response was not offered. This is the same question format developed for the 1991 study.

The respondents randomly assigned to Experiment 3 were first asked the awareness filter "Have you heard about any health problems that may be caused by . . .?" Those who answered "Yes" were then asked a follow-up question identical to the standard form question used in Experiment 1 (Table 1). The awareness filter in Experiment 3, unlike most previous "Don't know" filters, is specific with respect to what dimension of awareness is being measured, namely if the respondent is aware of any health problems associated with the food safety issue. We believe that it is very unlikely that the respondent will have an informed attitude about the risk associated with the food safety issue if they are not aware of any health problems associated with the food safety issue.

Table 1
Question Format for the Four Experiments.

Experiment 1 (Standard Form - No Filter)

a. How concerned are you about Salmonella on foods? Would you say you are . . .
Very concerned, Somewhat concerned, A little concerned, or, Not concerned about it
N = 248

Experiment 2 (Concern Filter)

a. Are you concerned about Salmonella on foods? Would you say you're . . .
Concerned, or, Not concerned
b. (If concerned) Are you . . .
Very concerned, Somewhat concerned, or, A little concerned about it
N = 253

Experiment 3 (Awareness Filter)

a. Have you heard about any health problems that may be caused by Salmonella on foods?
Yes, No
b. (If Yes) How concerned are you about Salmonella on foods? Are you . . .
Very concerned, Somewhat concerned, A little concerned, or, Not concerned
N = 255

Experiment 4 (Concern and Awareness Filter)

a. Have you heard about any health problems that may be caused by Salmonella on foods?
Yes, No
b. (If Yes) Is this something that concerns you, or would you say you're not concerned about Salmonella on foods? Are you . . .
Concerned, or, Not concerned
c. (If Concerned) Are you . . .
Very concerned, Somewhat concerned, or, A Little concerned
N = 244

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Experiment 4 utilizes both the concern and awareness filter. Respondents assigned to this experimental group were first asked the awareness filter question. If they indicated that they were aware of health problems associated with the food safety issue, they were also asked the concern filter question. Those who said they were "Concerned" were asked the degree-of-concern question (Table 1).

The random assignment to the various subsamples was apparently successful. Cross-tabs of the four experimental groups with 40 other variables including demographic characteristics, other attitude items, behavior measures, knowledge measures, and food roles were examined. None were statistically significant.

The marginals for those respondents assigned to Experiment 2, Experiment 3, and Experiment 4 were all statistically different from the standard question form (Experiment 1) for all eight food safety issues. The paper by Robert Herrmann illustrates these differences.

The 1995 Study

We returned to the field in 1995 and conducted a national survey with 1200 adults. We constructed the same four experimental groups that were created for the 1994 study. The food issues for the 1995 study were pesticides, Listeria, Salmonella, BST, and fat. Analysis of the cross-tabs of the food issues with other variables indicated that the respondents were randomly assigned to the four experimental groups.

To determine if the awareness filter was a measure of actual knowledge, we created knowledge questions for Salmonella, BST and fat. We found strong evidence that those who said they were aware of the health problems of these food issues were much more knowledgeable about the issue than those who were not aware. Arthur Sterngold discusses these findings in his paper.

Conclusion

These three studies have clearly indicated that standard degree-of-concern questions encourage some respondents to overstate their concerns about food safety issues, either because the question is leading or they are encouraged to give a response even though they are not aware of any risks associated with the food safety item. We have also been able to highlight the difference between underlying general dispositions and informed and developed attitudes. When new product safety, biotechnological, food safety or environmental issues are introduced to the public, researchers often measure public reaction. Most likely, if standard unfiltered questions are used, the researcher will measure a mixture of underlying general dispositions and informed opinions. If a researcher wishes to measure informed opinion or developed attitudes, we believe that both a concern and awareness filter may be advisable. Both type of measures are useful and appropriate. We need to be clear about what we are measuring, and not confuse general dispositions with informed opinions.

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Endnotes

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Do Surveys Accurately Assess Public Opinions?

Typical survey questions may encourage people who have never heard about an issue to nonetheless express an opinion about it. To examine this, we conducted a national telephone survey of 1204 adults in 1995. Early in the survey, people were asked how concerned they were about "the use of BST in producing milk." Much later in the survey, people were asked several objective knowledge questions about very basic characteristics of BST. Of those respondents who were not familiar with any of these characteristics, nearly a third said they were concerned about "the use of BST in producing milk" when answering the earlier concern question. This finding contributes to the evidence that opinion surveys often may encourage people to fabricate answers about topics with which they are unfamiliar.

Arthur H. Sterngold, Lycoming College[1]

Introduction

Surveys and polls have become prominent elements of American political life, popular culture and commercial activity. They are used to inform, to persuade, and increasingly, to simply entertain. Yet, when surveys and polls ask about unfamiliar topics, they invite people to manufacture on-the-spot opinions that are little more than artifacts of the methods and instruments used to elicit the responses (Fazio, Lenn & Effrein, 1984).

Research on fictitious issues suggests the magnitude of this problem (Bishop, Oldendick, Tuchfarber & Bennett, 1980; Schuman & Presser, 1981). These studies show that many people will offer substantive opinions about imaginary topics when answering survey questions rather than admit they are unaware of the issues. For example, Bishop et al. (1980) found that a third of respondents offered opinions about the "1975 Public Affairs Act," even though no such act existed. If so many people will offer opinions about fictitious issues, it is likely that even greater proportions will express views about topics they are only vaguely aware of, but about which they have no real understanding.

Several methods have been proposed to deal with this problem. Nearly 50 years ago, Gallup (1947, p. 392) argued that before asking for people's opinions, we should first inquire if respondents have read or heard about the issues in order to identify those who "don't know what they're talking about." To achieve the same result, Philip Converse (1970) suggested that surveys should include objective knowledge questions about the topics of the opinion questions. Other researchers have recommended using measures of attitude strength or other ancillary characteristics to distinguish between stable opinions and more transitory ones (Schuman & Presser, 1981), including the "mushiness index" developed by the firm of Yankelovich, Skelly and White (Asher, 1988).

Awareness Filters

Sterngold et al. (1995) proposed using awareness filters to identify people who are unaware of issues before asking for opinions (e.g., "Have you read or heard anything about . . . ?"). In the 1994 study described earlier by Rex Warland, people were asked how concerned they were about "IMS in seafood," a fictitious issue. In response to a standard survey question, less than a third of the respondents said they were unfamiliar with IMS in seafood, while over half indicated they had positive levels of concern it. However, when people were first asked if they had heard about any health problems caused by IMS in seafood (the awareness filter), over three-quarters admitted they had never heard about IMS, and less than a fifth said they had heard about IMS and were concerned about it. This shows that using awareness filters can help reduce (but not fully eliminate) the tendency for people to fabricate opinions about unfamiliar topics.

Opinions Based On General Attitudes

When a filter question is used to screen out people who are unfamiliar with the issue, it decreases the number or respondents who qualify for the corresponding opinion question, reducing the effective sample size in the eyes of those researchers who treat "unaware" responses as missing data. Partly for this reason, some researchers have argued against the use of such filters, suggesting that even when people lack specific knowledge about an issue, they can still provide valid opinions based on their general attitudes (Schuman & Presser, 1981; Gilljam & Granberg, 1993; McClendon & Alwin, 1993).

However, encouraging people to express opinions about unfamiliar topics based on their general attitudes is poor science, and it may seriously mislead survey sponsors and audiences. For one, if a certain topic is unfamiliar to a person, then almost by definition, the person will have to speculate or guess about the topic's meaning in order to decide what general attitudes to draw upon and how to apply them. Such conjectures or guesses may be wrong.

For example, a survey conducted by Schuman and Presser (1981) asked people if they favored or opposed two highly obscure issues, the Agricultural Trade Act of 1978 and the Monetary Control Bill of 1979. The survey interviewers were instructed to record any spontaneous comments made by respondents to explain their answers. For the Agricultural Trade Act, some people made remarks indicating they believed the act was pro-trade (e.g., "We need more trade") while the comments of others suggested they believed the act would restrict trade (e.g., "Shipments from Japan are killing our products here"). For the Monetary Control Bill, a variety of inferences were offered by respondents about the bill's meaning, including, "That's a bill that has to do with controlling inflation," "Well, it must be about a balanced budget," and the "bill has to do with controlling pay raises." Other remarks suggested more capriciousness in how people answered the questions (e.g., "I don't know what it is, so I'll oppose it," "It has a bad ring to it").

Schuman and Presser (1981, p. 148) observed that even if some of these remarks represented reasonable conjectures about the nature and contents of the two legislative items, nonetheless, each was an "unsupported inference from the wording of the question."

Surely, it is not responsible for survey researchers to encourage people to offer opinions about specific topics based on their general attitudes when doing so may require respondents to speculate or guess about the meaning of the issues.

Equally important, when people are encouraged to give opinions about unfamiliar issues, survey sponsors and audiences are likely to be misled about the extent to which the public is ignorant about the issues. This is because when people express opinions, it is implied that they are at least somewhat familiar with the objects of those opinions. But this may simply not be the case when the opinions are based on general attitudes rather than specific views about the topics in question.

For example, in the 1994 study mentioned earlier (Sterngold et al., 1995), people were asked how concerned they were about "Listeria bacteria in milk," a serious but obscure food safety hazard. In response to a standard survey question, 17% of the respondents said they were unaware of Listeria, 15% indicated they were not concerned about it, and 69% expressed varying levels of concern. This gives the impression that at least the 69% of respondents indicating concerns were familiar with the issue. However, when people were first asked if they had heard about any health problems caused by Listeria bacteria in milk, 64% said they had not heard about it. This latter statistic provides a more accurate estimate of the public's familiarity with Listeria because it is based on responses to a filter question which directly asked people if they were aware of the issue.

Survey sponsors and audiences are likely to assume that the marginal results of surveys accurately reflect the true distributions of opinions among the public, treating survey results as literal descriptions of fact (Schuman, 1986; Bogart, 1957). In the absence of explicit efforts to determine the proportions of people that are unaware of an issue, survey reports may often give the impression that more people know and care about a particular issue than is actually the case.

Research Design and Measures

To study the extent to which uninformed consumers will express opinions about unfamiliar issues - and the efficacy of using awareness filters to reduce this tendency - we embedded a split-ballot (split-sample) experiment in a 1995 national telephone survey of 1204 adults. Details about the survey methodology are given in the paper by my colleague, Robert Herrmann.

The survey began with a series of questions asking people how concerned they were about several food safety issues, including "the use of BST in producing milk. BST sometimes is also called BGH." The remainder of this paper focuses solely on the results for this question.

The respondents were randomly assigned to experimental groups, each of which received different versions of the food safety questions. The no-filter group received standard concern questions, which asked: "How concerned are you about [issue]?" The answer choices were "very concerned," "somewhat concerned," and "not concerned." If respondents indicated they were unfamiliar with an item, their answers were coded as "unaware." The awareness filter group first received an awareness filter for each issue which asked: "Have you heard about any health problems that may be caused by [issue]?" Respondents who indicated they had heard about the issue were then asked the standard concern question given to the no-filter group, while people who indicated they had not heard about the issue were skipped to the next question.

Much later in the survey, all of the respondents were asked a series of objective knowledge questions about BST. These knowledge questions focused on rudimentary characteristics of BST that consumers who were legitimately concerned about the issue could be reasonably expected to know. Each of the objective knowledge questions was a multiple-choice item which offered three substantive answer alternatives and a "not sure" option. The following shows the exact wording of the questions and answer choices, as well as the proportion of respondents which chose each answer (correct answers are bolded and underlined):

Objective Knowledge Questions About BST

From what you've heard, is BST . . . ?
A preservative used in processed foods (%)
A hormone given to dairy cows (44%)
A mineral added to cattle feed (6%)
Or, are you not sure? (46%)

What food products may contain BST?
Fruits and vegetables (2%)
Chicken and eggs (3%)
Milk and other dairy products (56%)
Or, are you not sure? (39%)

What effects does BST have? Does it . . . ?
Reduce the fat content of milk cows give (1%)
Make cows give more milk (45%)
Keep dairy products from spoiling (9%)
Or, are you not sure? (45%)

Forty-three percent of the survey respondents gave incorrect answers and/or "not sure" responses to all three of the BST knowledge questions. Our experimental hypotheses were: (1) in response to the standard (unfiltered) concern question about BST, only a minority of these uninformed consumers would admit they were unaware of the issue, while a substantial proportion would indicate they were concerned about BST, and (2) using the awareness filter would significantly increase the proportions of uninformed consumers who admitted they had not heard about any health problems which may be caused by BST, and using the filter would also reduce the proportions saying they were concerned about BST.

Analysis

Table 1 shows that in response to the standard (unfiltered) concerned question, only 39 percent of the uninformed respondents said they were not aware of the issue, while 29 percent said they were concerned about the use of BST. The table also shows that when first asked the awareness filter, 75 percent of the uninformed consumers admitted they were unaware of the issue, and only 17 percent indicated they were concerned about BST. Thus, using the awareness filters nearly doubled the proportions of uninformed consumers who admitted the had not heard about the issue, and it reduced by over 40% the proportion expressing concerns about BST.

Table 1
Concern Responses of Uninformed Respondents for the No-Filter and Awareness Filter Groups

BST

Responses	**No Filter (n=110)**	**Aware Filter (n=127)**	**DIFF**
Unaware	39.1%	74.8%	35.7
Not Concerned	31.8%	8.7%	-23.1
Concerned	29.1%	16.5%	-12.6

Chi-square=33.35, df=2, $p<.001$.

These results are consistent with our hypotheses that in response to standard (unfiltered) concern questions, substantial numbers of consumers who are uninformed about the issues will nonetheless indicate they are concerned, and that using awareness filters can significantly increase the proportions of uninformed consumers who admit they are unaware of the issues and reduce the proportions indicating they are concerned.

Discussion

Opinion questions in surveys and polls are subject to numerous sources of error and bias, and in many cases, there are simply no objective means to identify and gauge such inaccuracies. In these cases, survey researchers, sponsors and users must rely on their own professional judgment and common sense to decide if the results are plausible, meaningful and useful. We believe these criteria often are not satisfied by surveys and polls that encourage people to give opinions about unfamiliar issues which they have not previously considered. As Bogart (1967, p. 337) argued, "what people think about public issues is really secondary to . . . whether they think about them at all."

On the other hand, rather simple and easy to administer filter questions can be used to first determine if people are familiar with a particular issue before asking for their opinions or concerns about the matter. Using awareness filters has two benefits - they can provide more accurate measures of the extent to which the public is ignorant about certain issues, and they can also reduce the tendency for people to express opinions and concerns about issues they neither understand or care about. In policy-oriented research, the former benefit may be the more important.

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Misinterpreting Expressions of Consumer Concern about Food Safety

Studies of consumer concerns typically ask "how concerned are you about ..." when assessing consumer concerns. This question form presupposes that respondents are concerned about the issue or seems to suggest that they should be. This study demonstrates how concern filters deal with this problem, producing a significant shift toward less-concerned responses. The standard question form also assumes respondents are knowledgeable about the issue about which they are being questioned. This study demonstrates the use of awareness filters to encourage the less-knowledgeable to indicate their situation.

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One remedy for the presuppositional problem inherent in such questions as "how concerned are you...?" is to utilize a two-step questioning process or filter. In the first step, the respondent is asked if they are concerned about a particular problem. Those who indicate concern then are asked how concerned they are. The use of a concern filter has been shown to produce response distributions which are significantly different from those obtained with the standard question form. One of the chief effects was to increase the percentage who indicated no concern along with reducing the percentages of those expressed some degree of concern.

Changes in Response Distributions with Concern Filters

In a recent study, we investigated the effects of the use of concern filters in a split-sample experiment in which respondents were questioned about their concern with five food safety issues. For the purposes of our project, respondents were randomly assigned to one of four categories, each of which was administered a different question form. Three of these question forms are described in Table 1 of the previous paper by Rex Warland (1996). The data were collected in a nationwide telephone survey conducted in 1995 (see Appendix).

Salmonella Concern

We first will examine the survey results for Salmonella. Salmonella is a bacterial contaminant of foods of animal origin and is familiar to many of the public. It is one of the most common causes of reported cases of food-borne disease (Flowers, 1988).

One group of respondents was asked questions in the familiar standard form: "how concerned are you about Salmonella?" Three responses describing varying levels of concern were offered and "don't know" responses were accepted when volunteered. On surveys and polls which ask for opinions about issues, a range of non-committal answers are possible (e.g., unaware, no opinion, undecided). These are frequently combined into a single "don't know" category. However, when people are asked about more personal matters, such as food safety hazards, the range of non-committal responses is likely to be more narrow. In our pre-tests, all the "don't know" responses were expressions of unfamiliarity with the hazards dealt with in the questions. For this reason, we decided to use a single "unaware" category.

A second group of respondents was given the concern filter form. Respondents receiving this treatment first were asked whether they were or were not concerned about Salmonella. Those who indicated they were concerned then were asked in a follow-up question to indicate their level of concern. Respondents were offered the same response categories as those for the standard question form, except that the "not concerned" category was not offered. The respondents were not informed that Salmonella is a bacteria.

As can be seen in Table 1, the responses obtained with the concern filter form differed significantly from those obtained with the standard question form. The chief effect of the concern filter was to produce smaller percentages expressing some level of concern and to produce larger percentages expressing no concern. The standard question form produced 8.6 percent indicating no concern with Salmonella, while

Table 1
Salmonella and Listeria Concern with Alternative Question Formats, 1995.

Response Category	Question Format Standard Form (n=302)	Concern Filter Form (n=293)	Awareness Filter Form (n=298)
Salmonella			
Very concerned	64.3%	53.6%	45.6%
Somewhat concerned	23.8	24.9	31.6
Not concerned	8.6	19.8	9.7
Unaware	3.3	1.7	13.1
Total	100.0%	100.0%	100.0%
Standard form vs. concern filter $\mathbf{x}^2 = 17.63$ (3 d.f.) p = .001 Standard form vs. awareness filter $\mathbf{x}^2 = 30.41$ (3 d.f.) p = .000			
Listeria			
Very concerned	41.7%	27.6%	21.8%
Somewhat concerned	24.5	21.5	17.4
Not concerned	11.6	24.6	4.4
Unaware	22.2	26.3	56.4
Total	100.0%	100.0%	100.0%
Standard form vs. concern filter $\mathbf{x}^2 = 24.02$ (3 d.f.) p = .000 Standard form vs. awareness filter $\mathbf{x}^2 = 76.79$ (3 d.f.) p = .000			

with the concern filter 19.8 percent indicated no concern. Thus, the use of the concern filter form more than doubled the percentage which indicated they were not concerned. At the same time, the percent indicating they were very concerned was reduced.

Listeria Concern

Respondents also were asked about their concern with "Listeria bacteria" in foods they eat. Listeria is another bacterial contaminant of foods and is ubiquitous in nature. While it has received increasing recognition from food scientists in recent years, it still is relatively unknown to the U.S. public. Outbreaks of food-borne disease caused by Listeria have been linked to both dairy products and to vegetables (Lovett & Twedt, 1988).

The question forms used were the same as those employed in the questioning about Salmonella (Table 1). With the standard question form, 11.6 percent said they were not concerned, while with the concern filter 24.6 percent said they were not concerned. The percent which said they were very concerned was 41.7 percent for the standard question form, while it was reduced to 27.6 percent for the concern filter form.

The magnitude of the differences between the standard form and concern filter results are more marked for the questioning about Listeria than for the questioning about Salmonella. We conclude that the effect of the concern filter is stronger when an issue or concern is less familiar. The larger number of volunteered unaware responses for Listeria indicate that it was markedly less familiar than Salmonella.

Changes in Response Distributions with Knowledge Filters

One approach to dealing with less knowledgeable respondents is to use a knowledge filter. With this approach, respondents are asked in an initial filter question if they have heard about an issue or are aware of it. Such a question should be used to identify those who are unfamiliar with an issue, as distinct from those who are familiar with the issue but are unable to make up their minds about it.

The effects of knowledge filters were investigated in our 1995 survey. To assess the effects of knowledge or awareness of an issue area on concern responses, a third group of respondents was given an initial filter question about awareness of the health effects of a hazard followed by a question to assess degree of concern. The results for the questioning about Salmonella and Listeria are reported here. For this form, respondents first were asked if they had heard of any health problems caused by Salmonella (or Listeria bacteria). Those who indicated they had heard of problems then were asked how concerned they were about them.

Salmonella Concern

The results obtained with the awareness filter form were compared to those obtained with the standard question form, described earlier. As can be seen in Table 1, the use of the awareness filter form in questioning about Salmonella concern produced a substantially greater number of unaware responses as compared with the unfiltered standard question form. Only 3.3 percent volunteered that they did not know about Salmonella in response to the standard form. With the awareness filter form which asked directly about awareness of health problems caused by Salmonella on foods, 13.1 percent indicated that they were unaware of problems caused by Salmonella.

Listeria Concern

The differences between the standard and the awareness filter forms were even more marked for Listeria than for Salmonella. With the standard form, 22.2 percent volunteered that they did not know how concerned they were about Listeria. With the awareness filter form which asked directly about their awareness of health problems, 56.4 percent said they were unaware of health problems caused by Listeria in foods. With the standard form 41.7 percent said they were very concerned about Listeria, while with the awareness filter form only 21.8 percent said they were very concerned.

Discussion and Conclusions

We have shown that concern filters as compared to the familiar standard question form produce sharply different response distributions for questions on two food safety concerns: Salmonella and Listeria. There is, moreover, evidence that the effects of concern filtering are more striking for less familiar hazards such as Listeria than for more familiar ones such as Salmonella. These results parallel those reported by Sterngold, Warland and Herrmann from a 1991 survey (1994). In that study, the differences between the two question forms were smaller for more familiar issues (pesticides in food, bacteria in food) than were those for less familiar issues (use of recombinant bovine Somatotropin in dairy cattle).

The use of an awareness filter also produced significant differences in the response distributions for concern with Salmonella and Listeria. Again, the effects seem to be greater for a less familiar issue (Listeria) than for a more familiar one (Salmonella).

We have identified some situations in which use of filters seems desirable. Researchers may wonder about the extra costs involved. We believe that it is not difficult to construct filters which do not disrupt the flow of the interview process. In fact, filter questions may make the interview more similar to a normal conversation. In everyday conversations, we typically ask others about the relevance of a topic before we embark on detailed questions about it. After listening in on a number of telephone interviews and questioning the interviewers who have worked on our surveys, we are convinced that filters have little or no effect on an interview. Nor, do they seem to slow the interview process much, resulting in additional costs.

Appendix

The data were collected in a telephone survey which asked questions about food safety, nutrition and health. Random-digit dialing (RDD) procedures were used in order to reach both listed and unlisted telephone numbers throughout the 48 contiguous states. In the survey, a main general sample provided three-fourths of the numbers called. A supplemental sample provided the other one-fourth of the numbers called. This supplemental sample was drawn from telephone exchanges with above-average proportions of non-white and lower income households and was used because these groups typically are underrepresented in conventional RDD surveys.

Numbers called were randomly assigned to one of four experimental groups. Each of these four groups was asked questions about a set of food safety issues using a different question format (see Table 1). To qualify to be interviewed, respondents had to be household members 18 years of age or older and be English-speaking.

If necessary, three or more call attempts were made on separate days before a number was retired from the active list. Efforts also were made to recontact and interview initial refusals. The interviews were conducted by a commercial telephone survey organization.

Interviews were conducted in late Spring 1995. A total of 3736 numbers were used to produce a completed sample of 1204 interviews. The response rate calculated was 32.2 percent based on final call attempts which resulted in refusals, ring-no-answers, busy signals, unavailable respondents, scheduled callbacks, answering machines, incomplete interviews and completed interviews.

To produce roughly equal numbers of males and females, interviewers asked to speak to male household members in roughly 60 percent of the cases and asked to speak to female members in the other 40 percent. If an individual of the requested sex was not available, interviews were requested with an individual of the other sex. After 604 interviews with females were completed, only males were interviewed. The completed sample consisted of 50 percent females.

We recognize that these sampling procedures, respondent selection methods and eligibility criteria were unlikely to produce unbiased estimates of population parameters. We believe, however, that the approach used was appropriate for our experimental approach which required substantial numbers of various types of respondents in order to ensure adequate cell sizes for the full range of response categories.

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Welfare Reform and Self-Sufficiency in Wisconsin: Will It Work?

Proposed Wisconsin welfare reforms are based on a work first model emphasizing immediate employment over education or skills training. A review of existing evaluation of welfare to work programs shows small earnings gains, but only for a population of AFDC mothers with school age children. The effect of expanding mandatory work programs to AFDC recipients with young children is unknown, but likely to be more costly and less successful than previous demonstration projects.

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Welfare Reform in Perspective

Welfare reforms both at the federal and state level are changing the focus of welfare from a check-issuing income support system back to a social casework model with an emphasis on achieving self-sufficiency through employment. Reducing welfare dependency through employment is a daunting task, given the basic skills employers require for low-skill jobs and the fact that the majority of long-term AFDC recipients are high school dropouts with little work experience (Holzer, 1995). Racism, need for child care and lack of transportation are other barriers to self-sufficiency. A 1991 GAO analysis of single mothers on AFDC concluded that few women with young children work full-time, year-round and that, with low wages and child care costs, 70% of AFDC mothers who work were estimated to have incomes below the poverty line with 40% having incomes $2,400 or more below the poverty line.

Welfare to Work Program Evaluations

Evaluations of seven states' work to welfare programs which used experimental and control groups show consistent though small gains in earnings and decreases in welfare costs for the experimental groups, but little effect on earnings or employment compared to controls five years later (Gueron & Pauly, 1991). Lower cost programs emphasizing broad coverage of AFDC participants and with an emphasis on job search produced greater program cost savings than higher cost education/skills training programs reaching fewer participants. Most of these programs served less than a third of the AFDC population and exempted women with children less than six, so little is known about program costs for programs which make work mandatory for women with young children who require child care.

The Riverside GAIN program employed a work first approach and achieved the largest increases in employment for program costs (Friedlander & Gueron, 1992). The work first approach moves welfare recipients into employment but does not increase earnings to self-sufficiency, i.e. participants do not achieve incomes at least at the poverty level. Most program cost savings come from a reduction in welfare rolls, both from moving current recipients off the rolls and discouraging entry to applicants faced with mandatory job search and time limited benefits (Friedlander & Gueron, 1992; Moffit, 1993). In Michigan Work First programs, average earnings place a family of 2 at 85% of the poverty line and a family of four at 56% of the poverty line (Eberts, 1995).

W-2 - Wisconsin Works Welfare Reform

As in other states, Wisconsin's proposed welfare reforms focus on reducing welfare dependency through mandatory participation in work activities. Given Wisconsin's extremely low unemployment rates, the program should be successful in initially reducing welfare rolls through low-cost job placement and job development activities. W-2 participants will be required to work 40 hours per week in one of four levels of employment with the highest level unsubsidized market employment. Failure to participate will result in grant reductions for every hour missed. Child care subsidies and health care insurance are provided for all working families below 165% of the poverty line, but with a sliding scale of copayments which will result in substantially larger child care costs for many currently employed JOBS participants. In addition, to meet anticipated increases in demand for care, the program authorizes subsidies at half the market rate for care to untrained providers. After the inital drop in welfare rolls, the plan projects that 50% of W-2 participants will be in public service jobs created in the community (CSJs) and 20% will be assigned to transitional activities which may include drug or alcohol treatment. Participants in the lowest transitions level will receive a monthly grant equal to the current average AFDC benefit of $519 for a family of three with no adjustments for family size. Assistance with education or job skills training is limited to short-term programs designed in cooperation with community employers which will produce immediate employment. The expectation is that by moving W-2 participants into the work force, increased work experience will lead to earnings gains over time and to self-sufficiency.

Will W-2 Increase Self-Sufficiency?

The W-2 Wisconsin Works program is a bold experiment which applies the principles used in the most successful welfare to work demonstration project, the Riverside GAIN program on a much broader scale. The W-2 program extends full-time work requirements to the entire AFDC population exempting only mothers with a child less than 12weeks old. Projections of earnings for W-2 participants are based on full-time, year-round work, a norm currently achieved by only 35% of all Wisconsin mothers of children (Cancian & Meyers, 1996). Given the high likelihood of work interruptions due to children's illnesses, loss of child care, and other barriers to employment for low-skilled mothers with young children, it is unlikely that many W-2 participants will achieve earnings above the poverty line. Participants in CSJs and the lowest transitions level will be required by law to work 30 hours per week with an additional 10 hours for education and skills training. Their incomes will be less than half the poverty line for a family of three and monthly grants without reductions for nonparticipation.

It is also not clear how effective community service jobs will be in increasing self-sufficiency or if supply will meet demand for CSJs, particularly in inner city Milwaukee which contains one half of the current AFDC caseload. Homemaker/Home Health Aide subsidized employment projects showed large short-term effects on earnings for participants (Bell & Orr, 1994), but the CETA public sector jobs program resulted in small earnings gains and displacement of existing workers by subsidized CETA employees (Blank, 1994).

If needed CSJs or child care is not available, large proportions of participants may be placed in exemption status, the equivalent of the former AFDC system, but at reduced grant levels and with time limits. An alternative scenario is that work requirements would be enforced without necessary support services, and welfare savings will come from the increased number of participants off the rolls due to sanctions (Handler, 1988). In either case, the main thrust of W-2 is focused on immediate employment to reduce program costs, a strategy which may increase earnings for AFDC recipients but which is unlikely to result in incomes providing self-sufficiency.

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Human Capital Investments of Divorced and Separated Women: Implications for Welfare Reform

An exploration of human capital investments of divorced and separated women as they relate to receipt of public assistance. Significant differences in human capital investments were found.

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Introduction

The negative impact of marital disruption on the economic well-being of women has been well documented in both census data and empirical research over the past three decades. One factor influencing the decline in economic well-being of women following marital disruption that is related to welfare reform proposals is the lack of investments in human capital (Mauldin, et al, 1990).

The increasing number of families receiving AFDC has long been controversial. Recently proposed reforms place emphasis on moving recipients from dependency to self-sufficiency employing various job-training and educational programs, incentives for employment and limitations on the receipt of AFDC (Bane and Ellwood, 1994; Katz, 1994a, 1994b). This presentation will explore differences among maritally disrupted women's investments in human capital, sociodemographic characteristics, and reliance on public assistance.

Methodology

A subsample of 338 young women (from the National Longitudinal Surveys of Work Experience of Young Women) who experienced marital disruption for the first time between the years of 1970 and 1985 were selected such that human capital variables, sociodemographic characteristics, and changes in these variables could be measured in the year of disruption, year prior to disruption, and two years following disruption.

Human capital variables included in this study were educational attainment, job training, health, occupational status, work experience and employment status. Other variables that might affect receipt of public assistance that were included for analysis were whether the young woman was unemployed in the current year and presence of children under the age of six years old.

The variable of primary interest in the analysis was receipt of public assistance or welfare. For each of the five years analyzed the young women are categorized into four groups: 1= did not receive public assistance in previous year or this year; 2= did not receive public assistance in previous year but received public assistance in this year; 3= received public assistance in previous year but not in this year; 4= received public assistance in previous year and in this year. Analysis of covariance was used to determine differences among the four groups in income, human capital variables, and other factors that might affect receipt of public assistance after controlling for age at the time of disruption, number of years married at the time of disruption, race, socioeconomic level of parental family, and whether or not the respondent remarried following disruption.

Results and Implications

Of the 338 young maritally disrupted women, 47.6 percent did not receive public assistance in any of the five years analyzed. About 9 percent of the young women received public assistance only one of the five years, 9.5% received public assistance two of the five years, 10.1% received public assistance three of the five years, 20.1% received public assistance four of the five years, and 4.1% received all five years. These young women were 27 years of age, on average, when marital disruption occurred. They had been married an average of 6.8 years. About 62 percent were white and 38 percent were African American or of other racial and ethnic origins. Only about 29 percent of the young women in this sample remarried within two years of disruption.

In year t-1, or the year in which the disruption occurred at some point, there were significant differences among the four groups of young women on all the human capital variables except job training. There were no significant differences in changes in educational attainment, job training or occupational status. Seventy percent of those who received public assistance in years t-2 and t-1 and 67 percent of those not receiving public assistance in year t-2 but receiving public assistance in year t-1 had children under six years old compared to only 44 percent of those young women who did not received public assistance in either of the two years.

In the year disruption is first reported, year t, differences exist in the human capital variables and in changes in job training. Forty-two percent of those not receiving public assistance in either year received additional job training compared to only 16 percent of those who received public assistance in both years t-1 and t. Differences continued in presence of children under six, and in addition, 23 percent of those who received public assistance in years t-1 and t were unemployed compared to 6 percent who did not receive public assistance in either year and to only one percent of those who moved off public assistance in year t.

The pattern of differences in human capital investments continued in years t+1 and t+2. By year t+2 however, there were no differences among the groups by presence of children under the age of six years old. One difference occurred in changes in job training. Fifty percent of those who did not receive public assistance in year t+1 but received public assistance in t+2 received additional job training compared to only 18 percent of those who received public assistance in both years.

About 52 percent of the subsample in this study received public assistance at some point during the five survey years analyzed. For only a small proportion of the sample did there appear to be long-term reliance on public assistance. Lack of use or reliance on means-tested public assistance does not necessarily reflect lack of financial need. Some of those women not receiving assistance may have been ineligible because they were just slightly over the eligibility limits.

About 48 percent of the sample did not need or did not qualify for public assistance during the five survey years. This group had significantly more human capital upon which they could draw on to provide financially for their families. They also had fewer health problems, fewer children under the age of six and lower unemployment rates.

The results of this study suggest that human capital investments can prevent reliance on public assistance programs. However, what type of educational assistance and job training will be necessary to move "welfare dependent" and "welfare cycler" recipients into jobs that will allow them to be self-sufficient, or more importantly, achieve an acceptable level of living? Occupational status differences exist among the groups in all survey years analyzed. How can those women with lower human capital investments achieve an occupational status that will move them off public assistance programs when the greatest job growth is in part-time and/or temporary jobs which typically do not provide benefits? In order to achieve the objective of self-sufficiency, the short-term costs would appear to be high. Finally, the diversity seen in this sample of maritally disrupted women suggests that public policies or welfare reform cannot be general in nature but specific programs must be provided based on individual circumstances and needs. Some of the women in this study need only minor assistance such as provision of child care, child support assurance, or medical care coverage, while others lack substantial human capital resources and this will require major investments in education and job training in order to move toward self-sufficiency.

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W-2: Consumers Lose Again

This is a summary of a panel presentation at the ACCI annual meeting, March 27, 1996. It comments on the political reality of Wisconsin welfare reform from the perspective of an experienced advocate for children and families. The presentation began with the reading of the following poem, written and submitted by Frances Payne Adler, at a public hearing in LaCrosse, Wisconsin, October 25, 1995.

Patricia Mapp, University of Wisconsin-Milwaukee\Extension[1]

"Wisconsin Works"

we're here to talk about poor women and work, poor
women and work, as if they don't work, but that's
another story, we're here to talk about poor women,
so let's talk, shall we? not in the polite mid-western way,
the smile on our face, how nice we are to find work for
women, the dignity of work for women, how American
we are to find work for women, a way out of welfare, how
nice we are, let's talk, shall we? what's the plan here, work
for women, what work? young people with three college
degrees are out of work, people in their fifties with thirty
years experience are out of work, what jobs, what work is
there for women with no skills, outside of mothering that
is, and we'll make sure it stays that way, we'll cut them off
from college, and we'll build in a little provision here, all
welfare moms who can't find a job, well we'll just find
them a job, won't we, we'll get into bed with industry,
and provide a slave labor force, did I say that? did I say
a drone class, a drudge call, dignity, what dignity, let's talk,
shall we? and once these women, these poor women get
a job, and the working conditions get worse, as they will,
and if these women dare speak out, well, industry will just
fire them, won't they, and then we'll build in another little
provision here, case workers will, and I quote, remove
children from the home if they're not adequately
financially supported, remove them from the home,
and aren't we nice, we'll build orphanages for these
children, and the women, the women, the poor women,
they'll be out on the streets, dignity? do I hear dignity?
do I hear work? work? let's talk straight here:
I believe you're selling an illusion, it's been done before,
it's been done to my people, brought to a concentration
camp, the words above the door, *arbeit mach frei*,
work makes you free, its been done before
in our country, in this state, we do it differently, we do it
politely, we smile and say aren't we nice Americans?

As poor people have become vilified as a perceived common threat, upon which both political parties can focus our national woes, the relevant consumer group, that is, those who consume welfare benefits, women and children, have been completely cut out of the debate on their fate. The omission of the opinions of the consumers of welfare benefits from consideration as W-2 (Wisconsin Works) moved quickly to passage in Wisconsin, portends its failure to remove people from poverty. However, since the goal is not to remove people from poverty, but to remove them from welfare rolls, it will be an instant success.

By deconstructing the terminology of welfare reform, we define predominantly women and children as the consumers. The taxpayer as funder also has a role to play as advocate for quality support services because it is in the public interest to do so. But contrary to the public interest, essential supports of child care and health care were undermined, made less affordable, and in the case of child care, less regulated, in the plan, dubbed W-2, and developed by the Indianapolis based Hudson Institute, proposed by the Governor of Wisconsin, and passed by the Wisconsin legislature in early 1996.[2]

Organizing any of the consumer groups, mothers, children, or the tax paying public, around improving the Wisconsin welfare reform proposal, was a daunting effort. The resulting law is an ideological blueprint which casts Wisconsin as a laboratory for massive behavior modification, and young children as guinea pigs for both politicians and economics researchers.

Contrast the political clout of poor women and children with other sub-groups of consumers of public benefits who have been particularly effective advocates for improvements, expansion, or simply protection of those benefits. Among those who have been most formidable are the elderly vis a vis Social Security, Medicare, Medicaid, and national standards for nursing home care. Environmentalists, likewise have been effective stewards in the public interest, defining all citizens as consumers who benefit from a safe, clean environment.

Although Wisconsin working women and children as consumers of child care made significant progress as a consumer coalition in the past 15 years, their inherent weakness was demonstrated when W-2 repealed all of the legislation which had been initiated and lobbied by a consumer coalition under the umbrella of the Wisconsin Women's Network Child Care Task Force.

The University of Wisconsin's Center for Consumer Affairs has served as a resource to the movement, providing training, research, and technical assistance to achieve the goal of quality child care for all families who need it at a price they can afford. The consumer umbrella was important in the past to defuse divisive issues that have plagued child care professionals and administrators, such as staff to child ratios. In the welfare reform debate, the advocacy legitimacy of the child care consumer groups was divided and conquered by the strategic attack rhetoric which pitted AFDC recipients against working poor and everyone else in the social-economic spectrum.

While other interest groups, each with hired lobbyists, achieved some concessions, the child care and women's poverty network were thwarted from recognition throughout the legislative process. Even with the golden political attributes of legitimacy and credibility, this consumer coalition lacked economic clout to counter the heavily funded ideological blitzkrieg that culminated in W-2.

Hospitals pleaded for continued funding of health insurance for pregnant women and their young children, and succeeded in substantially restoring the Medicaid option known as Heathy Start. The insurance industry was granted an automatic transfer of the parent's health insurance co-payment to the insurance carriers. Labor unions, although still dissatisfied with the provision that two categories of employment effectively will pay W-2 workers below the minimum wage, got the bill to prohibit replacement of existing workers with W-2 participants.

The child care provisions of W-2 increase parent co-payments by more than 1000% in some cases, and provide an economic incentive for parents to use untrained providers, who will be reimbursed at 1/2 the rate of a licensed provider. These policies reverse the substantial gains in affordability and quality that the Child Care Task Force achieved in the 1980's.

Even though their work could have countered some of the simplistic assumptions about women workers, the child care profession, and poor children in W-2, the academic community, from those who study consumer behavior to those who research child development, were not part of the debate. The losers in the fray clearly were poor children, who constitute 2/3 of the welfare rolls, and continue as the classic unrepresented group in our democracy. The current and future challenge for the consumer movement is to respect the human capital represented by those women and children in need of basic supports, to weigh in beside them, and thus help balance the scales of justice.

Endnotes

1. Senior Outreach Specialist, Center for Consumer Affairs, University of Wisconsin, Milwaukee\Extension, and Coordinator, Child and Family Advocacy Institute, School of Family Resources, University of Wisconsin, Madison.
2. In order to implement the W-2 legislation, Wisconsin must be granted waivers of federal law. As of this writing, the waivers have not been approved.

Welfare Reform in Virginia: YES We Can!

Virginia received a federal waiver which allowed its welfare reform program to go into effect in July 1996. The program is being phased in across the Commonwealth over several years. Virginia Cooperative Extension is involved in job readiness education, which includes money management and consumer education, for welfare recipients who are working to become self-sufficient.

Irene E. Leech, Virginia Tech[1]

Key Elements

Virginia's Welfare Reform law created the Virginia Independence Program which includes the Aid to Families with Dependent Children (AFDC) Program and the Virginia Initiative for Employment Not Welfare (VIEW) program. The Commonwealth was granted a federal waiver to implement this program. Some parts of the program were implemented statewide beginning July 1, 1995; others are being phased in on a district by district basis.

No additional benefits are provided for children born ten or more months after the family begins the program. Unmarried teen parents must live with their parents and attend school to receive benefits. Mothers must identify the father of each child to receive benefits. Two-parent families receive the same benefits as single-parent families. Children of recipients are required to attend school or the family loses its benefits. If the children do not have appropriate immunizations, the family is sanctioned $50 per month for the first child and $25 per month for each additional child.

As the program goes into effect, Virginia AFDC recipients must report to the local Department of Social Services for an initial assessment. They have the choice of joining the program by signing the written individualized Agreement of Personal Responsibility or losing their benefits within three days. In signing the agreement, the recipient: 1) acknowledges responsibility to seek employment to support his or her family, 2) agrees to participate in assignments made by a case manager, 3) agrees to notify the case manager of changes in circumstances, 4) agrees to accept a job offer (failure to do so results in loss of benefits) and 5) agrees to arrange and find transportation and day care. When a recipient signs the agreement, the clock starts ticking. Recipients are expected to obtain a job within 90 days

If a recipient is unsuccessful in finding a job within that time, he or she then actively begins the VIEW Program. The job search continues. The ideal job is full unsubsidized private sector employment. If that is not available, an employer can be reimbursed for providing a job with income equal to the AFDC benefits. The last option is community work experience. Both state and private agencies have been recruited to provide this employment for experience.

While participating in this program, recipients continue to get AFDC for two years. When that time ends, the recipient is ineligible to receive ANY further benefits for at least two years. If they are unsuccessful in finding day care and/or transportation, the case worker helps them receive day care (which can last for up to twelve months past the end of the program), and assistance with transportation (generally provided by a local volunteer group). Medical assistance in the form of Medicaid continues to be available for the duration of the program and up to twelve months of transitional benefits may be available after that time.

If the recipient has anything other than full time unsubsidized employment, he or she begins to participate in a locally designed education program. A local coalition, coordinated by local Social Services staff, plans this program and contracts with appropriate providers. A variety of agencies are involved, each negotiating locally. Local Social Services Departments receive some state funding to support this program. However, the funding was not distributed in relation to the number of recipients so some localities have more funding for these activities than do others. Localities sanction participants who fail to attend sessions or otherwise meet local requirements. The 24-month clock does not stop ticking for the months when recipients lose their benefits in this manner.

Cooperative Extension's Participation

Virginia Cooperative Extension (VCE) determined that it could offer educational assistance to support this effort in several ways.

Job Readiness

VCE's primary goal for this effort is to help participants improve their self-sufficiency by improving their life and job readiness skills. According to the VIEW program, job readiness training is designed to help participants overcome personal and family barriers so they are competitive and successful in the labor market. Topics include: communication skills, life skills, motivational training, problem solving skills, assertiveness, nutrition, money management, parenting, and time management.

Culpeper was the first locality to offer this program. VCE received a contract to provide part of the educational programming. The local Chamber of Commerce, Community College, and Employment Commission were also involved. VCE's nine session education included: the transition, time and household management, scheduling and back-up, money management, meeting family needs, and looking to the future. These sessions are taught by a team of local extension agents, coordinated by an area administrator and supported by on-campus subject matter specialists.

Initial evaluation of this education indicates that participants are generally reluctant to enter fully into the sessions. They are there, not by choice, but because they cannot afford the benefit sanctions. Group make-up is different for each session because as participants obtain employment, they immediately drop out of the educational program. Educators must establish credibility with the audience each session and must respect the experiences and knowledge of participants. Hands-on activities are most appropriate. Participants are most interested in obtaining skills; not in general education which they cannot use immediately.

Parenting

VIEW can include parenting education. VCE can help recipients better communicate with their children and to set up procedures to assure that children are safe and that family responsibilities do not negatively impact work life.

Immunization

VCE can help participants understand the importance of immunization for health and financial well-being.

Earned Income Credit

The statute requires that recipients be informed of the federal Earned Income Credit. VCE offers this education and can provide it to VIEW participants.

Savings

The program allows recipients to have greater savings for future education or to establish a home-based business. VCE can help recipients plan to save and to learn to comparison shop and make decisions concerning where to save the money.

Home-Based Business

VCE has a strong, on-going Home-Based and Micro-Business program. Recipients can participate in this program to learn about establishing such a business, making business plans, financing, etc.

Day Care Provider Training

Sometimes this is part of the Home-Based Business programming, but it is also offered as stand alone programming. VCE and Social Services in Loudoun county have been providing this training. One participant who left welfare and has a viable business has been featured in the Washington Post as a success story for welfare reform.

Medicaid-HMO

The state's Medicaid program is moving to HMO's as providers. VCE is prepared to help recipients understand the differences in procedures and requirements of HMO's and traditional health care.

Electronic Transfers

Virginia is making plans to quickly move to electronic transfers of benefits. VCE can help teach recipients how to manage financial accounts and accept this technology which is new to them.

Community Work Experience

VCE offices and 4-H Centers may serve as sites for community work experience for recipients.

Endnotes

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Panel on Credit Issues and Consumer Welfare

The purchase of consumer durables often involves complex decisions about credit. Credit choices can have profound financial implications on consumers. For example, it estimated that consumers pay over $30 billion in interest on credit care debt per year. This session was designed to address the significant consumer welfare implications of the various credit decisions consumers must make. The session was designed to incorporate an extension perspective, a research perspective as well as the perspective of government officials.

Alan Mathios, Cornell University[1]

Susan Potkai, Federal Reserve Board[2]

Cynthia Fletcher, Iowa State University[3]

Lisa Daniel, Federal Trade Commission[4]

Richard Vosburgh, University of Guelph[5]

Presentation of Susan Potkai

The Federal Reserve Board and the Federal Reserve Banks receive hundreds of consumer complaints annually on consumer credit issues. Credit card issues ranked number one in the top 10 major complaints received by the Federal Reserve System in 1994, and other credit issues (consumer and real estate loans) ranked number two.

The process by which complaints are filed with the Board of Governors was discussed. The presentation focused on the large data bases that have been created by the Federal Reserve and the types of information that can be evaluated over time.

Presentation of Cynthia Fletcher

The second presentation was titled "Putting Consumers in Charge: Credit Education Strategies." Adult consumers face complex decisions about credit use. While bombarded by messages to "buy now, pay later" many consumers lack the knowledge and skills need to make wise credit choices and enhance their well-being. Extensive educational materials are available on consumer credit; however, many community educators lack the skills to select appropriate educational strategies and materials to reach target audiences.

Credit Education Satellite Video Conference

A credit education team composed of the (former) Office of Public Responsibility of the American Express Company, the USDA Cooperative Research, Education, and Extension Service, and extension faculty from seven land-grant universities designed, delivered, and evaluated a national satellite video conference, "Putting Consumers in Charge: Credit Education Strategies." Seven hundred twenty-nine site coordinators signed up to down link the two-hour conference on December 7, 1994.

Nine out of 10 of the site coordinators who completed an evaluation at the conclusion of the conference felt the event was an effective way to bring people together to talk about effective credit education strategies in their local community. To assess the effectiveness of distance education, the credit education team conducted an impact evaluation in late 1995, approximately one year after the video conference. Two hundred eighty-two site coordinators and other conference participants participated in telephone interviews. Nine out of 10 interviewees have continued credit education efforts. More than half have developed a long-term plan for their credit programs and approximately one-third have formed local task forces to work collaboratively to educate consumers.

Approaches to Credit Education

One of the greatest challenges facing community-based credit educators is reaching and motivating adult consumers. Credit educators use seemingly bipolar approaches to credit education. The most common face-to-face education is conducted in individual counseling sessions. Most educators also reported use of mass media to deliver information about credit use to consumers. Many voiced the concern that adults often fail to seek out education or advice until they face credit problems.

When asked to describe the most effective way to educate consumers about credit, a number of themes were identified. Interviewees acknowledged the need to use a variety of teaching strategies and to increase the use of experiential activities in adult education. As one educator stated "(we need to) find ways to get the audience involved in analyzing and making decisions and seeing consequences. We need more showing and less telling."

Timing is another issue. An educator said "People don't come to us for credit education until it is too late. We need to reach them prior to making a major purchase decision." And finally, a credit educator voiced frustration when suggesting the use of mass media as an effective approach. "TV and radio and multiple reinforcement...if (we) could spend as much money as they do for (advertising) products, we could begin to educate."

Implications

Results from the impact evaluation suggest that satellite conferencing is an effective way to bring together community leaders to discuss credit literacy needs and to work collaboratively on educational strategies. Perhaps the overriding issue facing community educators is reaching and motivating consumers with preventive credit education in a marketplace filled with complex, confusing, and competing messages.

Presentation by Lisa Daniel

The third presentation by Dr. Lisa Daniel, issues from the perspective of an economist and from the perspective of an administrator responsible for enforcement of the fair credit laws of the U.S. There has been considerable attention paid in the last few years, both in the press and in the public policy arena, to the issue of race discrimination in the credit market, particularly the home mortgage market.

Home Mortgage Disclosure Act Data: Racial Discrimination or Credit Unworthiness?

This attention has been driven in large part by the use (or misuse) of the Home Mortgage Disclosure Act ("HMDA") data, which consistently show large gross disparities in mortgage loan denial rates by race. These data became available to the public on an annual basis starting in 1989 and reports in the press of HMDA summary statistics rarely do justice to their inherent limitations.

Simultaneously (and not necessarily coincidently), in the four years since the Department of Justice settled its first mortgage discrimination case with Decator Federal Savings and Loan there has been increasing scrutiny by the federal regulatory agencies amid a very active debate among economists -- both academic and government -- as to the extent to which race discrimination accounts for the gross disparities in the percentage of loans granted by race.

Perhaps the most influential, but also perhaps the most controversial, study in this market was performed by the Boston Federal Reserve subsequent to the Decatur Settlement. The results of the Boston Fed study seemed to indicate that a significant percentage of minority loan denials in the Boston area were based on racial discrimination rather than on legitimate lending criteria.

Several subsequent studies have called into question the strength of those conclusions. Most important, they have furthered our understanding of the complexity of the mortgage lending process. Thus, the Bank Regulatory agencies, as well as the Federal Trade Commission, are in some sense caught in the middle between, on the one hand, public perception that there is a big (and seemingly straightforward) problem that the federal agencies should be addressing, and on the other hand, the twin realities that the evidence of a problem is mixed, and that detecting (let alone proving) discrimination is extremely difficult and resource intensive.

Limitations of the Home Mortgage Disclosure Act Data

As a starting point it is important to understand the limitations of the HMDA data. Other than demographic information about the applicant and the loan outcome, the HMDA data basically include two variables: income and loan amount. These two variables actually tell us very little about the creditworthiness of a particular applicant.

Although various studies using HMDA data often tout the fact that racial disparities exist "even controlling for income," in fact, controlling for income alone is virtually worthless. Lenders do not look at income by itself, rather they look at income relative to the demands on that income, or the "debt to income" ratios. Although one can construct a crude "housing debt to income" ratio by using the loan information amount, there may well be other debt (such as car loans or student loans) that is unaccounted for.

In a similar vein, lenders typically do not look at loan amount vacuum either, but rather as part of the "loan to value" ratio, i.e., the amount of the loan relative to the value of the house which serves as collateral. The HMDA data do not reveal this information.

Last, but equally important, the HMDA data do include information about past creditworthiness (i.e. from a credit report) or about job stability. In my view, the HMDA data are truly a case of a little knowledge being a dangerous thing.

Evidence from Other Data Sources

Although the HMDA data tell us little, there have been a number of studies using data sets that go beyond HMDA and include, many, if not all, of the information one expects lenders to based their decisions on. The best known of these is the 1992 Boston Fed Study, which looked at all the major mortgage lending institutions in the Boston area and concluded that, after controlling for economic variables (that are not available in the HMDA data), minorities were still 6 percentage points more likely to be denied than similarly situated white applicants.

A number of studies have followed, calling into question whether the Boston Fed actually obtained all of the explanatory variables (the lenders were asked to fill out questionnaires -- the investigators did not actually see the application files) that might have explained the discrepancy. One particularly telling discovery, noted by David Horne, was that a number of well-qualified minority applicants had actually applied for low-income subsidized loans and been turned down because their incomes were too high. Since the Boston Fed did not have that information, those applicants were treated by the model as being applicants who "should" have been accepted.

Another problem that is endemic to this area is that denied applicant files by definition have incomplete data relative to accepted files. For example, those applicants who do not have acceptable credit histories may never to on to get their homes appraised.

The Complexity of Mortgage Lending

In sum, the lesson both from the current economics literature and the experience of the regulatory agencies is that detecting, let alone proving, discrimination in the context of mortgage lending is extraordinarily difficult and resource-intensive because the process is not readily captured by a simple model and their are inherent data problems. Unfortunately, it is not as simple and straightforward as the press reports using HMDA data seem to suggest.

Presentation of Dick Vosburgh

The fourth presentation was by Dick Vosburgh. This paper focuses on plain language use in consumer loan contracts from major banks, a loan company, and a mortgage lender. This paper examined the "readability" of consumer loan contracts and the ability to change these contracts in order to make them more accessible to the consumer.

Participants demonstrated that contracts can be written so to significantly increase the readability of these contracts. More work is being done on evaluating changes in the comprehension of contracts using plain language.

Endnotes

1. Alan Mathios, Associate Professor Department of Consumer Economics and Housing. MVR Hall, Cornell University, Ithaca, NY 14853-4401.

2. Susan Potkai, Board of Governors of the Federal Reserve Board.

3. Professor Cynthia Fletcher, Associate Professor and Extension Family Management Specialist, Department of Human Development and Family Studies.

4. Dr. Lisa Daniel, Deputy Assistant Director, Division of Consumer Protection of the Bureau of Economics of the Federal Trade Commission.

5. Dick Vosburgh, Professor, Department of Consumer Studies.

Beyond Consumer Whatever: A Contribution to the Consumer Lexicon

Differences in interpretation of terms, or inadequacy of terms, frequently make articulation of ideas and effectiveness of communication difficult. This paper promulgates adoption of consistent interpretation of several terms to improve clarity of communication and expression of important concepts related to the consumer interest.

Edward J. Metzen, University of Missouri, Columbia [1]

Introduction

In the summer of 1982 a national invitational symposium entitled "Consumer Science in Institutions of Higher Education" convened on the campus of the University of Wisconsin-Madison, organized by Dr. Ronald W. Stampfl of that institution and funded by the U. S. Office of Consumer Education (Stampfl, 1983). The symposium brought together "individuals primarily from the national community of university scholars whose interest centered upon the consumer." The objective was "to assess and explore all matters relating to the consumer field in institutions of higher education." Dialogue was continuously interrupted by inability of participants to agree upon an appropriate title for the field--Consumer Science, Consumer Sciences, Consumer Studies, Consumer Affairs, Consumer Economics, and so on. As a convention to facilitate dialogue, participants agreed to adopt the term "Consumer Whatever" as an umbrella term for the field for the duration of the symposium. That conundrum has never been resolved with respect to titles of academic programs, organizations, publications, and so on; and, although absence of a common label for what we are engaged in is perhaps somewhat hurtful to our field, we have managed to live with diversity on this matter.

However, with respect to terminology that has to do with function, rather than title, clarity and commonality of meaning becomes perhaps a bit more significant. The purpose of this paper is to propose adoption and consistent interpretation of terms that will help to standardize meaning and express important concepts in consumer affairs.

About "Consumerism"

The term "consumerism," first coined by some elements of the business community to characterize the burgeoning consumer movement of the 1960's as some sort of unwholesome "ism" that represented a threat to the American way of life, has been interpreted in a variety of ways (Morse, 1993; Swagler, 1994). Given the widespread grassroots concern of the public over issues that affected their well-being as consumers, the early effort to veil the consumer movement in a shroud of ominous portent for our society was largely a failure, and that interpretation fell rather quickly into disuse, although some with an economic interest antithetical to the consumer interest perspective may still use the term with somewhat that type of negative connotation.

Consumer leaders gave the term a positive interpretation, defining it in terms of a range of efforts to improve the lot of people in their role as consumer. Mayer (1989) has defined consumerism as "a diverse and evolving social movement seeking to enhance the economic wellbeing and political power of consumers." He declares that "the goal of consumerism is to empower people -- both as individual buyers trying to get the most for their dollars and as a political force striving to rewrite the rules of the marketplace."

Maynes (1994) has presented a taxonomy of consumerism consisting of three views. One is the "scholar view," exemplified as "the articulation of consumer discontent and the furtherance of corrective measures." A second: "the activists, like Ralph Nader, have a narrower focus, tending to restrict consumerism to efforts directed toward government intervention on behalf of consumers." Thus, "many activists would exclude from the *consumer movement* such consumer information and education organizations as Consumers Union."

Mayer's perspectives are consonant with the Maynes taxonomy, in that both focus on empowerment of the consumer to act more effectively in his/her own interests in the marketplace, on the one hand, and both focus on achieving reforms in the marketplace via the political process, on the other. The two dimensions have an important commonality in that they are both couched in terms of furthering the well-being of consumers as economic and social entities. Both seem to be widely accepted by those committed to enhancing consumer well-being. Both attribute a positive meaning to the term "consumerism" from the standpoint of the consumer interest.

A third extant interpretation of consumerism is what Maynes titles the "moralists' view." It is characterized as "an obsessive interest in goods, akin to materialism." This pejorative definition of the term continues in rather widespread use today, the efforts of consumer spokespersons to limit its interpretation to mean a positive force for the consumer interest notwithstanding. Newspaper reports, editorial commentaries, and cartoons in the popular press, as well as statements of some environmentalists, are rife with usage based on the moralists' interpretation. Pope John Paul II decried consumerism, his criticism rooted in that view. In 1985 the ACCI commissioned a four-person committee, of which this author was a member, to draft a statement clarifying consumer leaders' use of the term to the American Catholics Bishops after it had been used in the pejorative sense in a draft of their Pastoral on the Economy (McEwen, 1995).

A review of definitions of "consumerism" in a variety of dictionaries yields both positive and negative interpretations of the term: "promoting consumer interests," "theory that an increasing consumption of goods is economically desirable," "a preoccupation with and inclination towards the buying of consumer goods," and "a program to promote consumer interests, including protection of the environment, restraints on abuse by business, etc." are examples. Swagler (1994), having nicely chronicled this definitional conundrum, concludes, "Apologists for business failed in their effort to turn *consumerism* into a term of contempt. Whether those concerned with the consumer interest have more success in deflecting the negative association of the term with excessive materialism remains to be seen."

A Proposed Solution to the Definitional Dilemma

When a word has two very different meanings, a straightforward solution seems to exist: coin a new term! With respect to the term "consumerism," Esther Peterson provided a clue for such a development in a speech as the newly-appointed, first Special Assistant to the President for Consumer Affairs, during one of her four regional conferences on the consumer interest. As a delegate to the conference in St. Louis in 1964, I recall that Ms. Peterson, having addressed conditions of the marketplace and the consumer interest, concluded that, given the volume of consumer goods and services sold in this country, "we are undoubtedly a *consumption*-oriented society," and then followed with the question, "but are we a *consumer*-oriented society?"

Definitional clarity would be served by limiting the interpretation of "consumerism" to the range of orientations and actions consonant with enhancing the consumer interest in a positive sense, and labeling obsession with ownership and use of market goods and services as "consumptionism." A simple development like promulgating the term "consumptionism" to represent "excessive materialism," "the frivolous accumulation of goods for their own sake," and similar connotations, can make a significant improvement in clarity of communication about consumer activity and the consumer movement. The term "consumptionism" serves well to differentiate that which is consumption-oriented from that which is consumer-oriented.

Given that "consumerism" is restricted to encompassing the gamut of activities and orientations intended to enhance the cause and condition of the consumer, some purpose may be served by also adopting terminology to differentiate the somewhat diverse interpretations of the term as used even in that sense. Descriptive adjectives have a purpose. Such labels as "macro-consumerism" and "micro-consumerism," or "individual (or personal) consumerism" and "system (or policy or context) consumerism," or "personal empowerment consumerism" and "reform consumerism," might be useful further refinements of the general concept, to delineate the variety of interpretations of the term "consumerism" even among those who hold in common the perspective that it means those elements of the consumer movement that further the consumer interest. Such further refinements of the concept, if merited, await further development.

Filling a Void in the Consumer Interests Vocabulary

The consumer interests field has been devoid of a singular term to denote the degree of effectiveness of individuals in the consumer role. Terms such as "consumer competence" or "consumer efficiency" may be used in discussions of consumers and their actions, but they do not capture what they attempt to convey in a definitive term that is rooted in an accepted conceptual or definitional framework. The intent of such phrases is to convey a sense of efficiency in the consumption process. They convey a suggestion of the relationship between returns (or utility) and outlays (or costs). On the production side, the ratio of product to resource inputs (generally expressed in terms of output per unit of labor input, but conceptually applicable also to product in relation to capital inputs), is labeled "productivity." A logical counterpart of that term on the consumption side is "consumptivity" -- in simple terms, the ratio of returns to outlays. More specifically, the definition of "consumptivity" proposed herein is "the ratio of the present value of all current and future extrinsic and intrinsic benefits derived from a good or service, relative to the present value of all current and future extrinsic and intrinsic costs expended in consumption of a good or service. That is, "consumptivity" is a measure of efficiency in consumption, the counterpart of "productivity" as a measure of efficiency in production.

Just as "production" denotes an activity or a total quantity resulting from that activity and "productivity" reflects a degree of efficiency in the production process, "consumption" denotes an activity or the total quantity resulting from that activity, and "consumptivity" reflects the degree of efficiency in the consumption process. The extrinsic outlays to be included in the consumptivity formula include money (representing labor and capital investment outlays to acquire it), as well as the value of human time absorbed in search, decision, purchase, use, maintenance, and disposal of a product or service.

Intrinsic outlays include frustrations associated with the entire process. Extrinsic benefits consist of material returns from the good or service -- comfort, safety, health, pleasure, nutrition, perhaps increased market value over time because of scarcity, and so on. Intrinsic benefits include the sense of status, well-being, or security that may devolve from the ownership and use of the purchased good or service, and even the pleasure that might be derived from the experience of effectiveness (or even ineffectiveness!) in the process of selection, purchase, use, maintenance, and disposal of it.

Consumptivity as here defined provides a useful tool for the consumer to conceptualize whether in each consumption transaction and in the total of all consumption transactions, he or she has attained the maximizing condition -- that is, marginal benefits exceed or at least equal marginal costs.

The concept of consumptivity could, of course, be constrained to represent the returns only to human effort expended in the search and purchase process. It could also be limited by considering only the material component of returns for the consumer's effort; that is, only the extrinsic component of the utility-providing purchase. Yet another conceptualization might consider only direct financial outlays and extrinsic returns from the purchase itself. The concept might also be useful in identifying the source of the "consumer profit" (the added utility) that is yielded from effective purchase processes over what might have been obtained by a hurried, haphazard purchase. Each of these constrained versions of the concept may merit more refined definition; that is, each concept could combine a descriptive adjective with the term "consumptivity." "Short-term, extrinsic consumptivity," "long-term, comprehensive consumptivity," are possibilities that come to mind.

Further refinements of the concept of consumptivity, if warranted, will require careful specification of terminology. Suffice for now to conceive of "consumptivity" in its broadest sense, that is, the ratio of the present value of all current and future benefits to the present value of all current and future outlays. The concept so framed is equally applicable to the totality of a consumer's purchases, as to individual purchases, albeit with increased complexity.

The concept of consumptivity as here defined is applicable also to consumption of home-produced goods and services, as it is to market-produced goods and services. With household production, in which case the intrinsic components are more significant relative to extrinsic components than in market production, and the boundary between production and consumption is murky because of the consumption aspects that derive from some home production processes, the conceptualization of consumptivity becomes even more subtle than in the case of consumption of market goods and services. Nonetheless, it can be effectively applied in conceptual terms that may affect consumer behavior in important ways even though exact measures and monetary values are not applied to all the factors involved in the consumption equation.

Consumers are unlikely to calculate carefully and in specific terms the kind of benefit-cost ratio suggested by this conceptualization, or attempt to put monetary values on all outlays and returns from them over time. Nevertheless, the concept of consumptivity as here defined provides a useful construct for sensitizing consumers to the important matter of functioning in a manner that enables them to garner maximum total returns from total outlays -- and it does so with a single term that parallels a widely known and widely used counterpart term on the producer side of economic activity. Frame of mind is an important factor in human activity. If promulgating consumptivity as a concept serves to enhance people's functioning in their consumer role, then it matters little that exacting measurements of outcomes are not taken; improved consumer well-being will be sufficient reward for the concept and its label.

Relevance of Proposed Terminology

It is important that concepts and terminology in a discipline or field be as consistent in interpretation as possible, and that they have consonance with each other. The definitions of "consumerism," "consumptionism," and "consumptivity" suggested here meet those criteria. Hopefully they will contribute to clarity of communication regarding consumer activity and the consumer interest, and perhaps help heighten the sensitivity of individuals to the potential that effectiveness in the consumer role has for contributing to the quality of their lives.

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Risk Perception, Money and Gambling: Perspectives and Programs

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A 1993 article in *Advancing the Consumer Interest* stated that "consumer professionals must recognize gambling as an activity that impacts families everyday" (Makela & Tucker, p. 17). Now three years later, we find that consumer professionals continue their exploration of this issue. Educators are developing programs and collaborating with other community agencies. Others are looking at their financial management programs considering the perspectives of risk and "get rich quick" as these pervade society today. With an estimated $482 billion bet legally in 1994 (Shapiro, 1996), consumer and financial management educators need to factor this expenditure into their educational, informational, and counseling agendas. To put this amount into more easily grasped terms, it is $1,850 per capita; six times what is spent annually on spectator sports (Harden and Swardson, 1996). This sum includes casino, lottery, parimutuel, and charitable gambling. If we look at attendance at various leisure activities, casino attendance is second to amusement theme parks. Total attendance at major league baseball games, symphony concerts, National Football league games, and Broadway shows now falls short of casino attendance by eight million a year (Shapiro 1996).

It is surprising to note that despite the size of the monetary expenditure on gambling, it is seldom included in expenditure surveys, financial management literature, or budgeting guides. Historically, at the 1853 International Statistical Congress, Ducpétiaux classified household expenses and included "gambling" as an "expense of a luxurious and improvidential type" (Zimmerman, 1936). At best with the current Consumer Expenditure Survey casino gambling may be classified as "other entertainment services, out-of-town trips" or other gambling as "miscellaneous fees, pari-mutuel losses." Are we dealing with the issue?

Thirty years ago, the only gambling in the United States was at casinos in Nevada. Now 37 states have lotteries, ten states have commercial casinos (as Nevada though some limit the size of bets), 24 states have tribal gambling establishments, and there is the potential for betting over the Internet and a cable television lottery channel.

Gambling is touted as a recreational and travel activity as noted by the recent publication of a directory of 2,000 gambling establishments in North America. Las Vegas has been described as fighting for its market share with new super hotels deploying "high-tech movies, lasers, robots, motion simulators, and fantasy architecture to lure you into synthetic realities" (Wolkomir, 1995, p. 52). This is an example of the competition developing among the 2,000 local and area gambling establishments for the consumer's dollars and leisure time. At the same time the industry is well aware of the competition between segments (casinos versus lotteries), between areas (Las Vegas versus all other areas), among operations (tribal, commercial, and state) to attract and hold the consumer and his/her money. The industry introduces and uses new terms—gaming, all-American entertainment, gimmicks (scent emitting slot machines), games (electronic poker, etc.), and clever promotions in an effort to increase participation. At the same time, various segments of the industry are funding political candidates and grassroots organizations to gain favor for policies.

Collaborative Programs

The impact of gambling, both in dollars and human resources, is not being ignored by researchers and educators. An excellent example of a collaborative effort is found in North Dakota. Motivated in part by holding the record for the highest per capita spending for charitable gaming ($450 in 1994) (Report on Charity Gaming in North America), the Council of Compulsive Gambling in North Dakota was formed. Its members include Gambler's Anonymous, the treatment community, the state gaming division, Lutheran Social Services, Mental Health Association, and North Dakota State University. The Council has developed materials to assist community groups' exploration of the topic "Gambling: Its Effects on Families and Communities in North Dakota" (Jacobson 1995). Materials include videos, brochures, and a series of posters promoting their 800-number helpline.

Another example of educational materials is that developed by Makela and Tucker, "Gambling:

Understanding the Issues" (1995). As with the North Dakota materials, their guide presents gambling-related issues that challenge individuals/families in their roles as voters, taxpayers, gamblers, and employees/employers. These challenges include if and how much money and time one spends on gambling, decisions as to one's stance on initiatives/referendums for expansion/limitations of gambling in the community or state, and one's views on topics such the extent to which gambling (1) is a painless tax, (2) leads to economic development, (3) changes the work ethic to a luck ethic, (4) is the "new white buffalo" for Native Americans, and (5) is adequately regulated and monitored.

Consumer professionals need to rethink their policy and financial management education against the background of state sponsored and promoted lotteries, the enticements of employment and revenue expansion, hit the jackpot as opposed to "a penny saved is a penny earned" mentality, and the realities of compulsive gambling. Gambling (legal) including state sponsored and promoted lotteries has influenced values for an entire generation. Consumer educators and financial planners must recognize this impact.

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Risk Perception, Money and Gambling: Perspectives and Programs
A Non-formal Educator's Perspective

Non-formal educators should increase their understanding of gaming issues and consider educational strategies in financial education to meet learning needs of diverse audiences.

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Although I live in Texas, my gambling nickels are safely stored in Minnesota --- this spring we'll see if proximity to minus 60 degree weather encourages a better return on nickel slot machines at the local Indian casino! I have always loved nickel slots, since childhood when I won the jackpot on a neighbor's machine at the lake. I hauled them home but my mother made me take them back!

Today's gaming issues expand well beyond nickel slot machines to a world view dominated by a gaming industry that promotes hope through winning (Makela & Tucker, 1993, 1995). As non-formal educators in communities across America, how should we respond? This brief summarizes five considerations for the non-formal educator.

1. The gaming industry is pervasive -- it is big business, so we must learn all we can.

Lottery is big business in Texas, a state with no casinos (Texas lottery, 1995). Just how big?

- Big enough to hold the record for two consecutive years as the lottery that sold more tickets than any other lottery in North America (that means surpassing all other states, Canada and Mexico). Only the national lotteries of Japan, Spain, France and Italy do better.
- Big enough to deposit more than $1 billion into state coffers, based on 12 months' sales, and $2.8 billion since its May 1992 start-up.
- In FY 1995, the Texas Lottery paid more than $1.7 billion in prizes to its players.
- Weekly sales of Lotto Texas average $23 million and weekly sales of scratch tickets average more than $40 million. These weekly sales are the highest in North America.

2. We don't know all of the impacts of gaming on families and communities.......yet, but negative sentiment about gaming is growing.

The signs of anti-gambling sentiment are growing. Not only is there an active National Coalition Against Legalized Gambling, but Congress will name a national commission to study gambling's impact. Little reliable information on the social and economic impacts of gambling are available nationally, so the commission is likely to address three key issues: (1) Does gambling create economic development? (2) What are the social costs? and (3) Does gambling lead to crime? Even the financial planning industry is being encouraged to take a stand against gambling (Simonoff, 1996).

3. Problem and compulsive gambling extract a toll.

Not everyone who gambles or plays the lottery will develop a serious problem. Some states, however, have reported increases in serious gambling problems. The Texas Council on Problem and Compulsive Gambling publishes 10 questions on compulsive gambling, a modification of the 20 questions from Gamblers Anonymous:

1. Have you lost time from work because of gambling?
2. Has gambling every made your home life unhappy?
3. Has gambling ever affected your reputation?
4. Have you ever felt remorse after gambling?
5. Do you ever gamble to get money with which to pay debts or otherwise solve financial difficulties?
6. Does gambling cause your ambition or efficiency to decrease?
7. After losing, do you feel you must return as soon as possible to win back your losses?
8. After winning, do you have a strong urge to return and win more?
9. Do you often gamble until your last dollar is gone?
10. Do you ever borrow to finance your gambling?

4. Promotion is an important element of gambling and lottery activities.

Texas state law prohibits lottery organizers from doing anything that "unduly influences" Texans to buy a ticket, but state law doesn't spell out what "undue influence" is. Nora Linares, the lottery's Executive Director says, *We don't promise to change people's lives. We offer them a way to have fun.* Yet the Texas Lottery spends $40 million a year on advertising, a factor that lottery executives say has helped to make Texas the Number One lottery (Texas lottery hits, 1995).

Is promotion the key to increased lottery sales? A resource economist at Texas A&M maintains the horse racing industry cannot survive in Texas without a program to advertise and promote racing as a sport against other forms of entertainment and advocates the use of a checkoff program similar to those used to promote other agricultural commodities (Chenault, 1995). The generation that controls all the money today in Texas knows very little about parimutuel wagering and doesn't know how to go to the window to place a parimutuel bet.

What are the parameters of undue influence? A marketing columnist for the Houston Chronicle recently cited examples of "going too far." (1) The Illinois State Lottery billboard that was posted in one of Chicago's poorest neighborhoods: *this could be your ticket out.* (2) The ad for Connecticut's Powerball jackpot: *You could get even luckier than you did on prom night.*

5. Non-formal educators can play a key role.

Because Extension educators and other community-based, non-formal educators can play a key role in educating the public, they must::

Identify the audience

Who needs information, education, remediation, policy development or technical assistance?

Identify the content/ desired outcomes

What do they need to know, understand, question, analyze? What should happen as a result of our non-formal education interventions?

Delivery

How should we deliver this education?

Educators would do well to acknowledge that while consumers may view their lottery purchases and gambling activities as recreational pursuits, lottery thinking is pervasive in society. Lottery thinking can cloud reality with its emphasis on the rewards of winning. Lottery thinking reinforces the idea that getting ahead financially is a matter of luck........that if we could just win ....everything would work out. Luck and hope as substitutes for financial planning and action.

Educators can capitalize on the "lottery mania" to teach important financial planning and consumer decision making skills. *What to Do Until You Win the Lottery* is an educational program packet currently in its design phase by this author. When complete later this year, this program will equip Extension educators and other non-formal education specialists to present programs that discuss the gaming industry and its impact on families and communities, involve participants in examining shifting attitudes and values concerning gaming, and challenge participants to develop a personal financial action plan to meet future financial goals.

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Consumer Interests Annual *Volume 42, 1996*

The Importance of Non-Residential Parent Contact for Children of Divorce

This study examines the importance of nonresident parent's contact with their children after divorce to determine if continued father involvement alleviated or exacerbated children's adjustment to their parent's divorce. Using data from the National Survey of Families and Households (NSFH), three measures of children's adjustment were tested. The results show that children's behavior problems are more associated with parental conflict than higher levels of parental involvement.

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Introduction

When a divorce occurs, the impact is felt by everyone in the family system: husband and wife, parents and grandparents of the divorcing couple, brothers and sisters, aunts and uncles. Certainly among those affected are the couple's children. Over one million children each year will experience their parent's marital dissolution, after which about 90% reside with their mothers (U.S. Bureau of the Census, 1995).

Moving from an intact to a divorced family can be an extremely stressful transition for many children (Amato, 1993; Hetherington, 1993; Kelly, 1993; Wallerstein, 1991). Although most children eventually adjust, for a significant minority, parental divorce is associated with long-term negative outcomes in the areas of academic achievement, behavior, social development, self-esteem, and peer relations (Kalter, Kloner, Schreier, & Okla, 1989). As adults, children who experienced parental divorce have poorer psychological adjustment, lower socioeconomic attainment, and greater marital instability (Amato, 1993).

A number of explanations have been proposed to account for children's difficult adjustment to divorce. Among the most frequently suggested are 1) loss of the noncustodial parent, 2) interparental conflict, 3) adjustment of the custodial parent, 4) economic distress, and 5) multiple life changes (Amato, 1993; Demo & Acock, 1988). Other factors that have been proposed to account for children's post-divorce adjustment include the child's gender and developmental level (Camara & Resnick, 1988), age at the time of divorce (Kinard & Reinherz, 1986), the amount of time since parental separation (Hetherington, 1993), remarriage of the custodial parent (Beller & Chung, 1992), social class (Hetherington, 1993), and differences in custody arrangements (Camara & Resnick, 1988).

One persistent line of inquiry has focused on the importance of father involvement in families where mothers maintain physical custody. Early studies indicated that continuing father involvement was positively associated with children's well-being. Hetherington (1993) concluded that unless the father was poorly adjusted or immature, or there was a lot of conflict between parents, frequent contact with the nonresidential father was associated with positive developmental outcomes for children. However, other studies based on large national surveys have found little association between father visitation and child well-being (Furstenberg, Morgan & Allison, 1987) and some researchers found the frequency of visitation to be negatively related to child adjustment (Healy, Malley, & Stewart, 1990).

For most fathers, contact with children drops off sharply following marital separation. Researchers analyzing data from the National Survey of Children reported decreasing levels of father involvement over time, to the extent that most children said they either had no contact or had rarely seen their fathers in the preceding year. Zill, Nord and Prosser (1993) reported only 23% of divorced children visited at least weekly with their nonresident fathers.

It has been speculated that if nonresident fathers remain actively involved, parents may be better able to maintain consistent discipline and supervision over their children. Simons, Whitbeck, Beamon, and Conger (1994) noted that nonresidential fathers who continue to fill the role of parent served to counter the poor communication, weak control and inconsistent discipline displayed by some single mothers. Other researchers have consistently shown low parental monitoring and inept discipline to be related to children's difficulties at school and delinquency. There is strong evidence that single parents tend to make fewer demands on children and utilize less effective disciplinary strategies than parents in intact families (Kalter, et al, 1989).

Other researchers suggest nonresidential fathers have little impact on their children beyond their contribution to the economic well-being of the family. In several studies, once family socioeconomic status was controlled, the negative consequences of father absence was minimal, (Hawkins & Eggebeen, 1991). Because divorce brings substantial economic deprivation to post-divorce, mother-only households (Weitzman, 1985), it could be argued that it is poverty (or at least a dramatic decline in the mother's financial status) that accounts for the scholastic and behavioral problems of many children of divorce (Kalter, et al, 1989). Such a decline might cause the children in her custody to feel depressed and angry, especially when it stands in sharp contrast to advantages enjoyed by the other parent (Wallerstein, 1991). Further, limited means may require moving to neighborhoods with inadequate schools, high crime rates, and a well-developed delinquent subculture (McLanahan & Booth, 1989). Thus the lack of economic resources and the sociocultural factors associated with being economically disadvantaged may themselves account for children's poor academic performance and for behavior problems, quite apart from the other consequences of divorce.

Data and Sample

The purpose of this study was to examine the importance of nonresident parents' involvement with their children and to determine if higher levels of involvement alleviated or exacerbated children's adjustment to their parent's divorce. The data were taken from wave two (n = 12,244) of the the National Survey of Families and Households (NSFH), a national sample survey conducted by the University of Wisconsin-Madison in 1992-1994.

The subsample used in this study are women currently residing with children between the ages of 5 and 18 whose father lives elsewhere were included (n=225). Mothers who were not married to the father of the child at the time of the child's birth were excluded. Fathers' reports on their biochildren living with the child's mother were also excluded due to the high number of nonresponses. All questions regarding the nonresidential parent and the child are in reference to one "focal child" selected randomly from all children in the mother's household.

Variables

In this analysis, children's adjustment is measured by mothers' responses to three questions: is the child difficult to raise; has the mother been asked to meet with a teacher or principal because of a behavior problem in the last 12 months; and has the child seen a doctor or therapist about emotional or behavior problems since 1988. The independent variables are drawn from findings of previous research and include five factors: child, mother and father's characteristics, father involvement, and six conflict variables (see Table 1). A limitation to the study is that mother's and father's incomes and current employment status were not incorporated into the models because of the large numbers of nonresponses. A further limitation is that the analysis uses mothers' reports about fathers' involvement rather than fathers' first-hand accounts.

Analysis

Means, frequencies and correlations were examined to explore the characteristics of the sample and bivariate association between variables (see Table 2). To examine the factors associated with the liklihood of having adjustment problems in different areas, logistic regression analyses were used because the dependent variables are dichotomous. The estimated coefficients indicate the direction of the relationship between independent and dependent variables rather than the magnitude of the relationship (SAS Institute, 1989). Models for each adjustment problem are estimated separately to contrast the results across all four.

Results

Table 2 shows the estimated coefficients (and standard deviations) for all three models. Of the child's characteristics, only gender is significant. Boys were less likely to see a doctor or therapist because of a behavior or emotional problem. This finding runs counter to expectations because, in general, boys' adjustment problems take the form of aggressive, deviant behavior which might lead to a counseling referral. Mother's remarriage influenced outcomes in three different dimensions. If mother had remarried she was less likely to perceive the child as difficult to raise or to be called to school to see a teacher or principal. This strengthens the notion that a warm and supportive stepfather can assist mothers in their parental role, although some researchers would say that the extra resources stepfathers bring into single-mother households has a stronger impact on the quality of

Table 1
Measurement of Variables

Variables	Measurements
Dependent variables:	
Difficult to raise (DIFFICULT)	1 if difficult, 0 otherwise.
Asked to see a teacher/principal (SEETEAC)	1 if was asked to meet a teacher/principal in the last 12 months, 0 otherwise.
Seen a doctor/therapist about emotional/behavioral problem (SEEDOC)	1 if seen a doctor/therapist about emotional/behavioral problem since 1988, 0 otherwise.
Independent variables:	
Child's Characteristics	
Child age (CAGE)	Age of child in years.
Child gender (CGENDER)	1 if male, 0 if female.
Mother's Characteristics	
Maternal age (MAGE)	Mother's age at child's birth.
Marital status (MARRIED)	1 if currently married, 0 otherwise.
White (WHITE)	1 if white, 0 otherwise.
Household size (HHSIZE)	Number of persons in household.
Public assistance (ASSIST)	1 if received AFDC, general assistance, food stamps, or energy assistance, 0 otherwise.
Father's Characteristics	
Education (FEDU)	Number of years of formal education at child's birth.
Marital status (FMARRIED)	1 if currently married, 0 otherwise.
Geographic. Proximity (PROX)	Number of miles from the child's residence to father's residence.
Financial support for child (SUPPORT)	Dollar amount of financial support given to child during the last 12 months.
Father Involvement:	
Telephone/Letter (TELLET)	How often the child talk on the phone/receive a letter from father during the last 12 months/time since the child stop living together; 1 if not al all, 2 if about once a year, 3 if several times a year, 4 if 1 to 3 times a month, 5 if about once a week, and 6 if more than once a week
See father (SEEFAT)	How often the child see his/her father in person; same categories as TELLET
Dad's influence (DADINF)	How much influence the child's father in making major decisions about education, religion and health care; 0 if none, 1 if a little, 2 if some, 3 if pretty much, and 4 if a great deal.
Talk about child with father (TALKDAD)	How often talk about the child with his/her father; 0 if not at all, 2 if about once a year, 3 if several times a year, 4 if 1-3 times a month, 5 if about a once a week, and 6 if more than once a week.
Legal agreement (LEGAL)	1 if there is a legal agreement about child support, alimony, custody, or visitation, 0 otherwise
Conflict with Father:	
Where child live (CLIVE)	1 if there is a conflict about where child lives, 0 otherwise.
How child is raised (CRAISE)	1 if there is a conflict about how child is raised, 0 otherwise.
How father spend time with child (CTIME)	1 if there is a conflict about how father spend time with child, 0 otherwise.
How mother spend money on child (CMSPEND	1 if there is a conflict about how mother spend money on child, 0 otherwise.
How father spend money on child (CFSPEND)	1 if there is a conflict about how father spend money on child, 0 otherwise.
Financial contribution to child's support (CSUPPORT)	1 if there is conflict about how much father contribute to child financially, 0 otherwise.

Table 2

Estimated Results of Probit Analysis for Children's Adjustment: Difficulty in Raising, Seen Teacher/Principal, and Seen Doctor/Therapist (n=225)

Variables	DIFFICULT	SEETEAC	SEEDOC
Child's Characteristics:			
CAGE	0.003 (0.07)	0.12 (0.07)	0.02 (0.07)
CGENDER(male)	-0.34 (0.52)	0.13 (0.47)	-1.37 (0.54)**
Mother's Characteristics:			
MAGE	0.002 (0.058)	-0.10 (0.06)	-0.02 (0.06)
MMARRIED	-1.98 (0.74)**	-1.39 (0.60)**	-0.90 (0.65)
WHITE	-0.24 (0.54)	-0.93 (0.49)	0.52 (0.56)
HHSIZE	0.58 (0.24)*	0.26 (0.19)	0.51 (0.22)*
ASSIST	0.33 (0.61)	0.51 (0.65)	1.45 (0.66)*
Father's Characteristics:			
FEDU	-0.14 (0.12)	-0.06 (0.09)	0.27 (0.12)*
FMARRIED	0.31 (0.62)	0.77 (0.56)	1.33 (0.62)*
PROX	0.0001 (0.0002)	0.003 (0.0002)	0.001 (0.001)
SUPPORT (in $1,000)	-0.03 (0.10)	0.03 (0.11)	-0.02 (0.11)
Father Involvement:			
TELLET	0.23 (0.21)	0.21 (0.21)	0.38 (0.26)
SEEFAT	0.06 (0.25)	0.56 (0.23)**	0.13 (0.26)
DADINF	-0.25 (0.24)	-1.01(0.30)***	-0.11 (0.24)
TALKDAD	0.36 (0.25)	0.22 (0.22)	-0.24 (0.23)
LEGAL	0.89 (0.89)	2.40 (1.29)	1.34 (1.18)
Conflict variables:			
CLIVE	0.21 (0.63)**	0.76 (0.61)	1.79 (0.72)**
CRAISE	0.26 (0.63)	0.84 (0.58)	-0.33 (0.57)
CTIME	0.27 (0.67)	1.76 (0.65)**	2.06 (0.65)**
CMSPEND	-0.97 (0.77)	-0.51 (0.68)	-0.78 (0.68)
CFSPEND	0.67 (0.61)	-1.41 (0.67)*	1.46 (0.63)*
CSUPPORT	-0.91 (0.77)	0.44 (0.63)	0.50 (0.69)
Constant	-4.55 (2.84)	-6.39 (2.82)**	-11.53 (3.09)
Log-likelihood	-74.91	-69.84	-62.41
Chi-square	256.36	203.45	133.44

Note: * $p < .05$ ** $p < .01$ *** $P < .001$

parenting (Bronstein, Clauson, Stoll, & Abrahms, 1993). Household size positively influenced mother's perception that the child was difficult to raise and for the child to see a doctor/therapist. Public assistance was also correlated with seeking counseling perhpas through subsidies for financial help to pay for such care. As father's education level increased, and if the father remarried, the more likely the child was to see a doctor or therapist. It may be that children perceive the stepmother as rival for father's time and attention. Stepmothers may also bring their own children to a remarriage which can lead to its own set of adjustment problems.

Father involvement with children was significant in only one model: the more children saw their father in person more likely the mother was to meet with a teacher or principal. The more influence dad had in decision making, the less likely the mother was to meet with a teacher/ principal. Finally, four conflict variables were positively related to behavior problems in all three models: conflict over where the child lives, conflict over how the father spends time with the child, and conflict over how the father spends money on the child.

Discussion

The process of divorce almost always involves a high degree of conflict and emotional turmoil for both parents and children before and after parental separation. Several studies have found a strong correlation between children's adjustment and parental conflict, regardless of the parent's marital status (Kurdek, 1991). When there is a frequent, recurring friction between parents, children display more adjustment problems (Camara & Resnick, 1988).

These results suggest that it is parental conflict rather than contact that is associated with reported behavior problems among children. Higher levels of father involvement only attained significance with regard to mothers' meeting with teachers and principals and was positively associated with fathers seeing their children in person. But these results are based on mother's reports and therefore may be heavily influenced by her association between father visitation and children's behavior problems at school. Children can often display argumentative or hostile behavior before and after visitation if they are placed in a position of divided loyalty between parents (Ricci, 1981).

All but two measures of parental conflict were associated with children's behavior problems. This suggests that a number of children are caught in the cross fire of their parent's acrimony every year and have the scars to show for it. This points to the need for structured mediation programs, community-based educational workshops and supervised visitation programs aimed at promoting cooperative co-parenting after divorce. Even parents who can't attain cooperation can learn how to avoid conflict. Given that many children from divorced homes get labeled as "troublemakers" by school authorities it is important for school personnel to become more sensitive to the needs of children from this at-risk group and how to help them become functioning and competent adults. Finally, recognizing that there are limits to what the law can do, it can be a tool to create balanced and enforceable support and visitation agreements. To the extent that the legal system promotes conflict and poor co-parental relations, it is damaging to divorcing couples and their children in both the short and the long term.

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Factors that Influence Noncustodial Fathers' Compliance With Child Support Orders

This study explores factors that influence noncustodial fathers' compliance with child support orders. Significant factors include the size of the child support award, the administration of automatic income withholding, and the frequency of visitation. Suggestions for child support policy are offered based on the findings from this study.

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Introduction

The Family Support Act of 1988 established uniform guidelines designed to increase the size of child support awards and thereby lift children out of poverty. Pearson, Thoennes, and Tjaden (1989) evaluated whether the new guidelines successfully increased the levels of support ordered and estimated that child support orders increased an average of 15% after the implementation of the guidelines.

The increases in child support awards that result from the use of uniform guidelines, however, may unintentionally affect the compliance behavior of noncustodial fathers. Several researchers argue that child support legislation has been ineffective because there appears to be a greater resistance from noncustodial fathers to pay child support as the size of support orders increases (Garfinkel, Oellerich, & Robins, 1991; Sonenstein & Calhoun, 1990). If uniform guidelines result in increased noncompliance, then the goal of reducing children's poverty may not be attained for some children. In this context, policy makers need to consider a wide range of factors that influence fathers' willingness to pay child support. This paper uses data obtained from noncustodial fathers to explore the tradeoffs between the size of child support awards and the probability of compliance, while controlling for demographic, psychological, economic, and legal factors that may influence child support compliance.

Research Hypotheses

The theoretical framework used to generate and test hypotheses regarding child support compliance suggests that legal, economic, demographic, and psychological factors may influence compliance rates. The key premise of the framework is that noncustodial parents choose to allocate their resources to their children, subject to their preferences and the constraints they encounter. That is, noncustodial fathers choose to pay or not to pay child support as a result of the interaction between their preferences and their constraints.

The primary hypothesis for this investigation is that as child support awards (AMTOWED) increase, child support compliance will decrease, ceteris paribus (i.e., the own-price effect is negative). Child support legislation mandating uniform award levels often results in higher award amounts being ordered. Noncustodial fathers may become sensitive to the increased cost and choose not to comply with their child support order. Other legal factors that are hypothesized to influence positively child support compliance include the frequency of visitation (VISIT), the type of custody arrangement (JOINT), and whether or not child support payments are automatically withheld from the noncustodial father's paycheck (INCWH).

It may be that fathers who are more involved with their children through frequent visits are also more likely to comply with child support orders. Fathers who share joint-legal custody with the custodial mother may display higher compliance rates because this type of custody arrangement offers them the opportunity to make psychological investments in the day-to-day decisions that affect their children's lives. Automatic-income withholding may improve the enforcement of child support orders, especially if noncustodial fathers have a desire to appear to be in compliance to their employers.

Four economic factors are hypothesized to influence child support compliance. It is hypothesized that compliance will increase with the noncustodial father's income (NCPINC) and educational level (NCPEDUC), as well as with the educational level of the custodial mother (CPEDUC). The custodial mother's income (CPINC), however, is hypothesized to have a negative influence on compliance.

Limitations in the noncustodial father's income may affect the compliance behavior of noncustodial fathers. A noncustodial father may feel less compelled to pay child support, however, when the custodial mother earns more money than he does. With regards to education, well-educated fathers may be more motivated to support their children financially if they have learned the negative outcomes associated with children who are raised in the absence of their fathers and/or in poverty. Mothers with higher education may have developed better negotiation skills and may use them to elicit compliance from noncustodial fathers.

Demographic factors that are hypothesized to be negatively associated with child support compliance are the noncustodial father's current marital status (NCPMAR), the custodial mother's current marital status (CPMAR), and the distance of the father's residence from his children's residence (DISTANCE). The current age of the child (CHLDAGE), the sex of the child (GENDER), whether or not the noncustodial father was married to the custodial mother at the birth of the child (MARBIRTH), and the number of children awarded child support (NUMKIDS) are demographic factors hypothesized to be positively associated with child support compliance.

If noncustodial fathers have remarried, their desire to devote resources to the children from their previous marriage may wane as the desire to invest in their new household increases. Noncustodial fathers may also justify noncompliance upon the remarriage of the custodial mother, given that she is now able to combine income with a new spouse. Noncustodial fathers who live great distances from their children may have less of an incentive to pay children support, given the restricted contact they have with their children. Noncustodial fathers may have stronger preferences to invest resources in older children to whom they have had a long-lasting attachment. With regards to the sex of the child, past research has suggested that noncustodial fathers are less likely to pay child support for male children (Seltzer, 1991). Noncustodial fathers may feel a greater need to invest resources in their daughters who they may view as being more vulnerable. Noncustodial fathers who were married at the time of their children's birth may have developed a better rapport with their children than fathers who were never married to the mother. Finally, compliance may manifest itself as a reflection of the resolve of custodial mothers with more children to secure child support given their greater financial need.

Two psychological factors that may influence child support compliance include whether or not the relationship between the custodial mother and the noncustodial father is characterized by conflict (CONFLICT) and the noncustodial father's perception of satisfaction regarding the number of opportunities he has to visit his children.

Noncompliance may result when the noncustodial father views the payment of child support as associated with conflicts with the custodial mother. On the other hand, high levels of satisfaction regarding visitation may increase compliance with child support. The following section outlines how these hypotheses will be tested.

Methods

Data Set and Sample Selection

The data for this study come from both the 1988 and 1993 waves of the National Survey of Families and Households (NSFH). Using a panel design, the NSFH covers a wide variety of topics on family life in America. The sample size of 454 is limited to males who identify themselves as noncustodial fathers with one or more children under the age of 18 living in the custody of the children's mother at the time of the 1993 interview.

Variable Specification

Noncustodial fathers' compliance with child support orders is the dependent variable in this study. A noncustodial father is defined as compliant if, over the past 12 months, he reports paying child support equal to or greater than what was stipulated in his child support agreement (COMP)[2]. COMP is a categorical variable comparing noncustodial fathers who pay at least the full amount with noncustodial fathers who pay less than the full amount of child support owed.

Seventeen independent variables are included in the empirical model based on the research hypotheses outlined earlier. All of the variables are obtained from the survey responses of the noncustodial fathers. Fathers are singled out in this paper because they make up 97% of all noncustodial parents (U.S. Bureau of the Census, 1993). Many researchers have attempted to understand the compliance behavior of noncustodial fathers, but most have relied on information gathered from custodial mothers (Seltzer & Brandreth, 1994; Sonenstein & Calhoun, 1990). Discrepancies may exist between mothers' and fathers' reports of fathers' activities due to reporter bias. If the viewpoint of the father is never considered, however, the inferences drawn from research may only reflect a picture of child support compliance as depicted by the mother. Of course, interviewing both parents about child support compliance would offer a more accurate view of the problem. Presently, however, there are no nationally representative U.S. data sets that offer independent information from each parent.

Empirical Analysis

A two-stage estimation process involving a probit analysis was chosen for two reasons. First, a probit analysis is an appropriate statistical technique when the dependent variable is categorical (Kinsey, 1984), as is the case with COMP.

Second, the sample construction process dictated by the organization of the survey questions may introduce a sample selection bias. Sample selection bias refers to systematic differences that may exist when those who "participate" in an analysis have different characteristics from those who do not participate. The manner in which the NSFH interview was constructed may inadvertently produce a sample selection bias between noncustodial fathers who have a legal agreement to pay child support and those who do not.

The NSFH interview uses filtering techniques in an effort to prevent respondents from having to answer a series of questions that do not apply to their specific situation. In this case, NSFH asks the 454 noncustodial fathers who report paying child support if they have a legal agreement to do so. The 276 respondents who answer "yes" to this question are then asked the questions used to construct the compliance variables. The 178 respondents who said that they did not have a legal agreement to pay child support, however, are excluded from the questions regarding compliance. This means that 178 observations could not be used in the estimation of the substantive equations because they did not participate in the questions used to generate the dependent variables.

The factors that affect whether a noncustodial father has a legal agreement to pay child support may be some of the same factors that affect the probability that he will comply with that agreement. Systematic differences between noncustodial fathers who have a legal agreement and those who do not may involve a selection bias that threatens both the internal and external validity of the study (Berk, 1983).

In order to ascertain whether this is true for this sample, bivariate analyses were performed to determine if the differences between the two samples are large enough to warrant the use of a procedure that explicitly corrects for selectivity bias. In sum, these analyses confirmed the suspicion that noncustodial fathers with a legal agreement are systematically different from noncustodial fathers without a legal agreement. Based upon these preliminary investigations and recommendations from other researchers regarding appropriate techniques to correct for sample selection bias (Berk, 1983; Heckman, 1979), it was decided to utilize the two-step estimation procedure first developed by James Heckman (1979).

The first step of the analysis is to estimate a probit equation using as the dependent variable the question that serves to filter out the observation of compliance. In this case, the question that designates whether or not the noncustodial father has a legal agreement to pay child support (LEGAGR) is the dependent variable. The equation is written as follows:

$$\begin{aligned}\text{LEGAGR} = {} & a0 + a1{*}\text{NCPMAR} + a2{*}\text{CHLDAGE} \\ & + a3{*}\text{DISTANCE} + a4{*}\text{CPMAR} + a5{*}\text{CPEDUC} \\ & + a6{*}\text{CPINC} + a7{*}\text{NCPEDUC} + a8{*}\text{NCPINC} \\ & + a9{*}\text{CONFLICT} + a10{*}\text{NUMKIDS} + a11{*}\text{VISIT} \\ & + a12{*}\text{SATISFIED} + a13{*}\text{MARBIRTH}.\end{aligned} \qquad (1)$$

The purpose of equation (1) is to create a variable that, when included in the subsequent regression equation, corrects for sample selection bias (Heckman, 1979). The name of this variable is LAMBDA. LAMBDA represents the probability that an observation is excluded from the sample of interest. Biased regression estimates can be minimized by including the LAMBDA variable as a regressor in the substantive equation of interest.

Five of the 13 variables included in equation (1) were statistically significant[3]. In sum, the probability of a noncustodial father having a legal agreement increases with the frequency of visitation, the remarriage of the custodial mother, and if the noncustodial father was married to the custodial mother at the birth of their child. The amount of conflict that custodial and noncustodial parents experience and the age of the child decrease the probability that a noncustodial father will have a legal agreement.

With constructed LAMBDAs from equation (1), noncustodial fathers' compliance with child support payments is estimated using a probit specification. Equation (2) is estimated using only the sample of fathers who report having a legal agreement, but the correction factor, LAMBDA, is also included among the regressors. Mathematically:

$$\begin{aligned}\text{COMP} = {} & b0 + b1{*}\text{AMTOWED} + b2{*}\text{NCPMAR} \\ & + b3{*}\text{CHLDAGE} + b4{*}\text{GENDER} + b5{*}\text{DISTANCE} \\ & + b6{*}\text{MARBIRTH} + b7{*}\text{CPMAR} + b8{*}\text{CPINC} \\ & + b9{*}\text{NCPEDUC} + b10{*}\text{CONFLICT} + b11{*}\text{NCPINC} \\ & + b12{*}\text{NUMKIDS} + b13{*}\text{CPEDUC} + b14{*}\text{INCWH} \\ & + b15{*}\text{VISIT} + b16{*}\text{SATISFIED} + b17{*}\text{JOINT} + \\ & b18{*}\text{LAMBDA}.\end{aligned} \qquad (2)$$

Garfinkel et al. (1991) suggest that the relationship between child support compliance and the size of the award may not be linear. That is, the relationship between compliance and the independent variables cannot be described by a straight line. They use a quadratic specification to test whether compliance ratios vary in a nonlinear fashion with the size of the award. They find that the probability of compliance with child support awards appears to increase at a declining rate. That is, compliance improves as award size increases until the award size hits a certain threshold, after which compliance begins to decline. Given this evidence, a second polynomial equation is estimated that includes a squared term ($AMTOWED^2$) that allows the compliance measures to vary nonlinearly. The inclusion of a squared term implies the prediction that a curved line better describes the relationship between compliance and the vector of independent variables than a straight line.

Results

Descriptive Statistics

With regards to child support compliance, the weighted descriptive statistics show that 61% of the fathers in this study have legal agreements to pay child support. The average noncustodial father owes $3,005 in annual child support payments and made only six payments during the 12 months preceding the survey. Nearly half (47%) of the noncustodial fathers surveyed did not pay any child support at all. Only 41% of the sample paid at least as much as they were legally obligated to pay. Table 1 presents the weighted descriptive statistics for all of the independent variables for the full sample of noncustodial fathers (N=454) and for the sample of noncustodial fathers with legal agreements to pay child support (N=276).

Results of the Main Effects and Polynomial Models

The results of both the main effects and polynomial models suggest statistically significant trends. The probit results find the chi-square test for overall goodness of fit to be statistically significant (χ^2=45.24, $p<.001$ for the main effects model; χ^2=52.7, $p<.001$ for the polynomial model). Table 2 displays the results for both the weighted main effects model and the weighted polynomial model.

There are five variables found to be significant across both models, AMTOWED, INCWH, VISIT, CPINC, and CONFLICT. Although the size of the child support award is found to be significantly associated with child support compliance, it is not significant in the hypothesized direction. It was hypothesized that higher child support awards will lead to lower compliance rates among noncustodial fathers. It is, therefore, surprising to find that the size of the child support award is positively, instead of negatively, associated with compliance.

The squared term is also highly significant for the polynomial model. Unlike the size of the child support award, however, the squared term is associated with compliance in a negative direction. The results for these two terms are interpreted together to mean that as the size of child support awards increase, noncustodial fathers increase compliance, but the rate at which their compliance increases is declining. The calculated threshold where these two terms intersect is $26,198. This is the point at which the direction of the association between compliance and the award size changes from positive to negative. This threshold implies that noncustodial fathers are more likely to pay at least the full amount of child support if their annual award amount is below $26,198 and above that amount compliance declines.

The results suggest that noncustodial fathers who have their child support payment automatically withheld from their paychecks and sent directly to the court or government agency are more compliant than noncustodial fathers who pay on a voluntary basis. The number of overnight visits is also found to be an important factor. The results indicate that the more overnight visits children have, the more likely their noncustodial fathers are to pay the full amount of child

Table 1
Weighted Descriptive Statistics for All Independent Variables.

	Full Sample (N=454)		Legal Agreement (N=276)	
Variable	Mean	SD	Mean	SD
Legal Factors				
AMTOWED	3005.14	5169.19	4836.28	5972.85
INCWH	.28	.42	.40	.47
VISIT	51.63	71.06	68.80	77.49
JOINT	.32	.45	.52	.48
Economic Factors				
NCPINC	29,680.00	25,979.00	31,957.92	27,429.21
CPINC	17,040.00	7293.75	17,693.85	7666.18
NCPEDUC	12.70	2.10	12.93	2.08
CPEDUC	12.41	1.85	12.56	2.09
Demographic Factors				
NCPMAR .32	.45	.31	.45	
CPMAR .38	.47	.48	.48	
MARBIRTH	.62	.47	.82	.37
DISTANCE	425.30	1000.85	369.99	898.43
NUMKIDS	1.7	.98	1.78	.93
CHLDAGE	10.30	4.60	10.20	4.37
GENDER	.49	.41	.49	.41
Psychological Factors				
CONFLICT	7.42	5.45	6.54	5.40
SATISFIED	.08	.25	.09	.28

Table 2

Determinants of Compliance With Child Support Orders (N=454).

	Main Effects	Polynomial
Variable	COMP B (t)	COMP B (t)
Legal Factors		
AMTOWED	.04 (2.1)*	.09 (3.4)***
AMTOWED^2	——	-.002 (-2.5)**
INCWH	.53 (2.9)**	.5 (2.8)**
VISIT	.005 (2.9)**	.005 (2.5)**
JOINT	.14 (.81)	.08 (.49)
Economic Factors		
NCPINC	-.0006 (-.14)	.003 (.58)
CPINC	.03 (2.6)**	.03 (2.1)*
NCPEDUC	.027 (.47)	-.008 (-.14)
CPEDUC	-.07 (-1.59)	-.08 (-1.7)
Demographic Factors		
NCPMAR	.27 (1.3)	.22 (1.1)
CPMAR	.46 (1.5)	.44 (1.4)
MARBIRTH	1.64 (1.7)	1.4 (1.4)
DISTANCE	-.0002 (-1.9)*	-.0002 (-1.7)
NUMKIDS	.023 (.23)	-.007 (-.007)
CHILDAGE	.005 (.2)	.08 (.31)
GENDER	.02 (.086)	.02 (.1)
Psychological Factors		
CONFLICT	-.067 (-2.5)**	-.06 (-2.2)*
SATISFIED	.3 (.87)	.25 (.72)
LAMBDA	2.5 (1.8)	2.2 (1.6)
CONSTANT	-2.5 (-1.3)	-1.9 (-.99)
Pseudo-R^{2a}	.14	.16
χ^2	45.24***	52.7***

*$p<.05$; ** [illegible] ***$p<.001$

[a] Aldrich an[illegible] (1984) propose a pseudo-R^2 statistic for probit models.

support owed. The fact that noncustodial fathers' level of satisfaction regarding the number of overnight visits is controlled for in the equations makes this finding even more meaningful.

Noncustodial fathers also appear to be less compliant with child support orders when there is more conflict experienced with custodial mothers. Finally, compliance improves as the custodial mother's income increases.

Policy Agenda

The final part of this paper will present three recommendations stemming from the research presented in this study. Each recommendation will be followed by a statement explaining the reasoning behind it.

Policy makers should incorporate guidelines for setting award sizes with reasonable estimates regarding the expenditures of raising children.

The formulation of uniform child support guidelines is based on the specification of percentages of income that are necessary to cover the expenditures of raising children adequately. Taking inflation into account, the estimates for raising children will inevitably grow higher. The use of higher estimates ultimately may lead to higher award amounts.

Policy makers have been cautioned that as guidelines increase award amounts, noncustodial fathers may become noncompliant. This caution may unnecessarily lead policy makers to choose overly conservative estimates in order to prevent noncompliance. The finding from the polynomial equation that compliance tends to decrease if award amounts rise above the range of $26,198 does offer some evidence that caution is still warranted concerning a negative effect on compliance from award size. The range at which compliance appears to decrease, however, is well above the average amount of child support owed by the majority of noncustodial fathers in this study ($3005). Therefore, policy makers should be able to have lessened anxiety that higher awards will lead to noncompliance for the majority of noncustodial fathers.

Continue the enforcement of child support compliance through methods such as automatic income withholding.

Automatic income withholding has been successful at improving compliance with child support orders since 1985 (Beller & Graham, 1993). Therefore, it should continue to be used. Many states have withholding laws, but not all states actively support their implementation. If all states fully implemented automatic income withholding for all child support orders, then there would probably be a significant decrease in the amount of noncompliance by noncustodial fathers.

Encourage policies that promote equitable contact with the noncustodial father.

The results of this study confirm the hypothesis that noncustodial fathers who see their children more frequently are more likely to pay support. Legal agreements about child support and visitation are generally made in the same court setting, but the processes by which they are determined differ greatly. Child support awards follow presumptive guidelines. This means that judges must observe the guidelines, unless a written reason against their application is given. This process generally reduces inequities in judgments and improves noncustodial fathers' perceptions regarding fairness.

Judgments regarding visitation agreements, however, are generally made under full judicial discretion. If noncustodial fathers perceive that the amount of visitation they are awarded is arbitrarily decided upon and that it is not equitable, given the amount of child support they are ordered to pay, then compliance may suffer as a result. Disseminating this information to judges involved in divorce cases may make them more aware of the impact their decision regarding visitation has on child support compliance.

For the benefit of the next generation, child support policy deserves a high priority from researchers, legislators, and policy makers. This is true because the consequences for children extend into adulthood (King, 1994). The findings and recommendations from this study should help in directing public policy effort to improve child support compliance.

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Endnotes

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2. Additional analyses were conducted using other definitions of compliance. Results are available upon request from the author.
3. Detailed results for equation (1) are available from the author upon request.

Consumer Interests Annual *Volume 42, 1996*

Changes in the Child Support Enforcement Environment During the 1980s: Effect on the Educational Attainment of Young Adults

This paper examines changes in the effects of child support payments on the educational attainment of young adults in the United States over the 1980s, using data from the 1979, 1984, and 1988 Current Population Survey. Findings are partially consistent with the hypotheses of a stronger decline in the effect of child support on education after 1984 than before due to stricter child support enforcement bringing more of reluctant fathers into the system.

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Introduction

According to recent estimates, if present trends continue, one out of every two marriages will end in divorce (Cherlin, 1992). In addition, the percentage of never-married mothers out of all single-parent families has increased sharply from 6.5 percent in 1970 to 15.4 percent in 1980, and 31 percent in 1991 (U.S. Bureau of the Census, 1992). Almost half of female-headed families are living below the poverty line, and close to 40 percent will depend on welfare at some given time during the year (Moffitt, 1992). Among those female-headed families above the poverty line, many experience substantial economic hardship due to the loss of a partner's or spouse's income (Duncan & Hoffman, 1985). Poverty and welfare dependence may have a negative effect on our society overall; but, this paper focuses mainly on the effect that the economic insecurity of single-parent families has on the future productivity of children.

Educational attainment is an important component of children's well-being, and also an indicator of future productivity and performance in society. Several studies have found that on average the educational attainment of children from two-parent families exceeds that of those in one-parent families (e.g., Krein & Beller, 1988; McLanahan, 1985; Shaw, 1982). This difference may be due in part to the lower income of the single-parent family. One reason many single-parent families suffer economic hardships (or insecurity) is lack of or low child support payments. Beller and Graham (1993) argue that the public has come to view child support as a significant factor that benefits the general well-being of children, especially their educational outcomes.

The child support enforcement system has been in a state of transition since the 1970s. In 1974, Congress passed the Child Support Act, and the Federal Office of Child Support Enforcement was created. This Act required all states to establish Child Support Enforcement offices at the state level. In 1980, Congress extended federal support to all children eligible for child support, despite income or their status with regard to Aid to Families with Dependent Children (AFDC). In 1984, Congress passed the Child Support Enforcement Amendments, which required all states to establish guidelines to be used by courts to decide child support obligations and to withhold support payments from the wages of delinquent parents.

This paper extends the work of Hernandez, Beller, and Graham (1995), using a mother/child data set extracted from the Current Population Survey (CPS) March/April Match Files. Hernandez et al. (1995) used only two points in time (1979 and 1988), and the results are for the most part consistent with the hypotheses that the beneficial effects on educational attainment of child support have declined over time and that, as a result of stricter enforcement, a somewhat more reluctant group of fathers were paying child support at the end than at the beginning of the decade. Despite the apparent consistency of these results with the hypotheses, the implications of these findings warrant further and more detailed investigation. By adding an intermediate year (1984), we can assess whether the change was in one consistent direction or fluctuated during the 1980s. This may also explain why changes in the effect of child support on educational attainment during the 1980s do not seem dramatic.

Hypotheses

Was this change in the effect of child support income on educational attainment continuous during the 1980s? Did the unobservable characteristics of noncustodial fathers change during the 1980s? The analyses of the 1984 CPS mother/child extract in this paper can help to answer these questions. In this paper with the addition of 1984, we divided the 1979-88 period into two parts--1979 to 1984 and 1984 to 1988. Since the 1984 CPS sample was collected before the Child Support Enforcement Amendments of 1984 were passed, we could examine what happens to the effect of child support on education from 1979 to 1984 before the Amendments. Then, between 1984 and 1988, we could examine what was the effect after the 1984 Amendments. As argued above, it is the stricter enforcement that may bring more reluctant payers into the system, and it is this influx of reluctant payers that may have caused a decline in the effect of child support on education.

The first hypothesis tested in this paper is that the change in the effect of child support on education is larger between 1984 and 1988 than between 1979 and 1984. Although child support enforcement became stricter between 1979 and 1984, we do not expect much change in the effect of child support on education because no laws were passed to increase child support enforcement during this period. After the 1984 Amendments, we speculate that the proportion of reluctant payers in the system would have increased more dramatically. This is due to stricter child support enforcement brought about by the 1984 Amendments. Another hypothesis that we will test is that the change in the effect of child support on education compared with that of other sources of family income between 1984 and 1988 was bigger than the change, between 1979 and 1984.

Data and Descriptive Statistics

We extracted samples from the 1979, 1984, and 1988 CPS March/April Match Files for all mothers and their (eldest) children between the ages of 16 and 19. We excluded children under 16 because schooling is generally compulsory for them. We also excluded children over 19 because in some states they can receive child support only if they are still in school, which creates a possible endogeneity problem.

Our sample of children ages 16 to 19 living with their mother decreased continuously throughout the 1980s. This sample of children ages 16 to 19 decreased from 4,734 in 1979 to 4,443 in 1984, and to 4,169 in 1988. The decrease in the number of all children ages 16 to 19 living with their mother is consistent with the decline in the number of 16-19 year olds in the general population throughout the 1980s (U.S. Bureau of the Census, 1990). Following a similar trend, the number of children living in an intact (two-parent) family decreased constantly from 1979 to 1988. However, the number of children living in a mother-only family in our samples increased from 1,195 in 1979 to 1,372 in 1984, and then decreased to 1,308 in 1988. The trend in the number of children living in mother-only families in our samples is also consistent with the trend in the general population. In general, the divorce rate (per 1,000) and the out-of-wedlock birth rate (per 1,000) increased over the life of the children in our samples. However, the divorce rate slightly decreased between 1984 and 1988, which may explain the change in our samples (U.S. Bureau of the Census, 1992).

With the addition of the 1984 sample, for those deemed eligible by the Census Bureau, the percentage awarded child support was almost the same in 1979, 1984, and 1988. However, the percentage currently due and receiving child support showed a big increase from 1984 to 1988. This increase from 1984 to 1988 could be attributed to stricter enforcement after the Child Support Enforcement Amendments of 1984.

Theoretical and Empirical Models

Theoretical Model

The theoretical framework for this paper originates with Becker's (1965, 1981) human capital and household production theories. According to Becker's theoretical framework, "quality" of children can be viewed as a commodity produced within the household by combining inputs of parental time and market goods and services. One can expect that as income decreases the household will have less access to market goods and services. In addition, in the case of single-parent families, the quantity of parental time available for producing "quality" children is reduced because of the absence of one parent from the household.

Education is an investment in children's human capital produced with inputs of time and market goods and services, and educational attainment is an output measure of this investment. Within the household production theory, "well educated" children can be viewed as a commodity produced within the household by combining inputs of parental time and market goods and services. Child support income contributes to increase the inputs of time and market goods and services, thus increasing educational attainment of the children. Children who receive child support may benefit from a greater input of time from both parents. A mother who receives child support may use some of it to purchase market substitutes for her time in household chores, and thus have more time to spend with her children, while a father who pays child support may have closer and greater contact with his children. It is the potential for and nature of this relationship that we focus on in this paper.

Empirical Model

To measure the impact of child support income on children's education for the child support-eligible population, we estimate the following equation for each year:

$$ED_i^t = \alpha^t SE_i^t + \beta^t INCEXCS_i^t + \delta^{tCS_i^t} + e_i^t \qquad (1)$$

where t represents 1979, 1984, or 1988; (suppressing the superscript) ED_i is an educational outcome for the *i*th child; SE_i is a vector of socioeconomic characteristics of the child and the mother; $INCEXCS_i$ is total income excluding child support; CS_i is child support income; and e_i is an error term.

We measure ED_i in three different ways: years of schooling completed; whether or not the child is behind in or has dropped out of high school; and whether or not the child has graduated from high school. SE_i includes measures of the quantity of available time inputs, such as mother's employment and number of siblings; measures of the quality of time available, such as mother's education and age at the child's birth; demographic characteristics such as child's age, gender, and race; and control variables measuring current location of residence.

The first hypothesis we test is that the change in δ was larger between 1984 and 1988 than between 1979 and 1984. We can represent this as

$$\frac{\delta^{79}}{\beta^{79}} - \frac{\delta^{84}}{\beta^{84}} < \frac{\delta^{84}}{\beta^{84}} - \frac{\delta^{88}}{\beta^{88}} \qquad (2)$$

where δ is the coefficient of CS. The second hypothesis is that the change in the ratio of child support income to other sources of family income between 1984 and 1988 was bigger than the change, between 1979 and 1984. We can represent this as

$$\frac{\delta^{79}}{\beta^{79}} - \frac{\beta^{84}}{\beta^{84}} < \frac{\delta^{84}}{\beta^{84}} - \frac{\delta^{88}}{\beta^{88}} \qquad (3)$$

where β is the coefficient of INCEXCS.

Variables

Dependent Variables. Three dependent variables are used in measuring educational attainment. The first number of years of schooling completed by the child, is constructed using the highest grade attended and whether that grade was completed or not. The second behind in high school, is coded 1 if the child is behind in school or dropped-out of school, and 0 otherwise. The last probability of high school completion, is coded 1 if the child completed 12th grade, and 0 otherwise.

Independent variables. The explanatory variables included a set of socioeconomic factors , such as, whether or not the child lives in the northeast, the northcentral, the south, a standard metropolitan statistical area, or a central city ; whether or not the child is male, age 17, age 18, age 19, black, or of Spanish origin; years of schooling completed by the mother, age of the mother at birth of child, whether the mother worked outside the home, and number of siblings. Also the explanatory variables included the amount of family income minus child support received, and the amount of child support income received.

Results and Discussion

Family Structure

Children in both two-parent and child support-eligible families were better off in terms of educational outcomes in 1984 than in 1979 or 1988. Education of children from two-parent (intact) families increased from 1979 to 1984, and then decreased to 1988, except for percent behind in school which continued to improve. For the eligible child support population, by all measures, education increased from 1979 to 1984 and decreased from 1984 to 1988. The educational outcomes fluctuate rather than show a unidirectional change over the 1980s.

During the 1980s families eligible for child support underwent many changes; for instance, the percentage of eligible families receiving child support decreased from 40 percent in 1979 to 38 percent in 1984, and then increased to 45 percent in 1988. The average payment (in 1987 dollars) declined about 20 percent, from $1,490 in 1978 to $1,167 in 1983, and then increased 9 percent to $1,285 in 1987. We speculated that this increase in average payments was due to the effect of the Child Support Enforcement Amendments of 1984, which may have increased the amount of child support paid. We expected that stricter enforcement would increase the number of noncustodial

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parents paying child support, and that the proportion of reluctant payers in the system would increase.

Next, we examine the difference in educational outcomes between children in intact (two-parent) and in child support-eligible families during the 1980s. Children from eligible child support families overall attained less education than those from intact families, but the magnitude of the educational difference (i.e., disadvantage) between these two family types changed during the 1980s. In 1979, children from eligible child support families completed .37 less years of schooling than children from intact families. In 1984, children from eligible families completed .36 less years of schooling than children from intact families, and in 1988, the difference between the two family types got bigger when eligible children completed .44 less years of schooling than children from intact families. For percent behind in school, children from eligible families were always worse off, however, the differences did not change much from year to year. Our last educational outcome, percent graduating from high school, showed that children from eligible families were also always worse off than children from intact families. In 1979 and 1984, children from eligible families were 11.6 and 11 percent, respectively, less likely to graduate from high school than children from intact families. However, in 1988, eligible children were 13 percent less likely than children from intact families to graduate from high school. These results indicated that the differences in educational outcomes between children from intact and eligible families did not change much from 1979 to 1984. But, between 1984 and 1988, the educational disadvantage suffered by children from eligible families increased for years of schooling completed and percentage graduating from high school.

After controlling for socioeconomic factors and family income, the educational disadvantage of the eligible families decreased in all years. (The complete regressions underlying the results are available upon request.)

The addition of the 1984 data shows a consistent pattern. The educational disadvantage between children from eligible families and intact families barely changed between 1979 and 1984. Nevertheless, for two of our educational outcomes the disadvantage increased between 1984 and 1988. Even after controlling for socioeconomic factors and family income, children from eligible families were worse off in 1988 than in 1984 for all our educational outcomes. We proceed to explore what happened to the effect of child support income on the educational attainment of children in the child support-eligible population throughout the 1980s.

Child Support Income

Table 1 shows how educational outcomes vary among children receiving different amounts of child support for the sample of children eligible for child support. Columns (1), (2), and (3) show the coefficients on the amount of child support received and other family income from the educational outcomes in 1979, 1984, and 1988, respectively.

Table 1

Effect of Child Support and All Other Family Income on the Educational Outcomes of Children Ages 16-19 Eli[illegible]r Child Support, 1979, 1984 and 1988.

	1979	1984	1988
Years of Schooling Completed			
Child Support Income	.025**	.030*	.022
Other Family Income	.004*	.008***	.005***
% Behind in School			
Other Family Income	-0.09	-0.27***	-0.21***
Child Support Income	-2.22***	-1.09	-1.13
% Graduated High School			
Child Support Income	0.95	1.32**	-0.49
Other Family Income	0.08	0.33	0.21**
Sample Size	792	902	966

Note: The numbers reported for the last two educational outcomes are partial derivatives obtained by adjusting the probit coefficients.

*, **, *** Denotes statistically significant at the 10 %, 5 %, or 1 % levels, respectively.

Between 1979 and 1984, increases in the amount of child support received generally increase schooling (except for percent behind in school). For instance, a one thousand dollar increase in child support income in 1979 (in 1987 dollars) increases years of school completed by .025, and in 1984 increases schooling by .030. Likewise, a one thousand dollar increase in child support income in 1979 increases the probability of graduating from high school by an insignificant 0.95 percent, but in 1984 the same amount of child support increases the probability by a significant 1.32 percent. In the case of percent behind in school, a one thousand dollar increase in child support income in 1979 lowers the probability of falling behind in school by 2.22 percent, but by only an insignificant 1.09 in 1984.

From 1984 to 1988, increases in the amount of child support received generally decrease schooling (except for percent behind in school). For instance, a one thousand dollar increase in child support income in 1984 (in 1987 dollars) increases years of school completed by .030, but only an insignificant .022 in 1988. Likewise, a one thousand dollar increase in child support income in 1984 increases the probability of graduating from high school by 1.32 percent, but in 1988 it actually lowers the probability by an insignificant 0.49 percent. In the case of percent behind in school, the coefficients for both 1984 and 1988 are insignificant.

The results in Table 1 agree with our hypothesis in Equation 2, that the change in the coefficient of child support was larger between 1984 and 1988 than between 1979 and 1984. For years of schooling completed, the difference in the effect of child support on education between 1984 and 1988 was larger than between 1979 and 1984. The difference between the child support coefficients in 1979 and 1984 was -.005, and the difference between the coefficients in 1984 and 1988 was .008. In the case of the probability of falling behind in school, the difference between the child support coefficients in 1979 and 1984 was -1.13, and the difference between the coefficients in 1984 and 1988 was .04. The results from the probability of graduating from high school are also consistent with the hypothesis. The difference between the child support coefficients in 1979 and 1984 was -.37, and the difference between the coefficients in 1984 and 1988 was 1.81. All these differences indicated a change in direction in the effect of child support income on schooling. Therefore, we can conclude that the effect of child support on education changed directions during the 1980s. Our results need to be interpreted with caution, however, since the changes in the coefficients on CS_t between 1979 and 1984 and between 1984 and 1988 are statistically insignificant.[3]

In general, the relationship between child support income and educational attainment becomes more tenuous over time, except for the percent graduating from high school in 1984. In other words, what seems like a strong (significant) association between the amount of child support income received and educational attainment in 1979 weakens over time. Therefore, these findings support our expectations that child support income becomes less effective at mitigating the educational disadvantage of nonintact families during the 1980s. In addition, our findings partially indicate that the association between the amount of child support income and educational attainment weakens after 1984.

Next, we consider how much stronger the effect of child support is than that of other income and examine what happened to the ratio of these effects between 1979 and 1984 and between 1984 and 1988.[4] In 1979, child support consistently has a much larger (significant) effect on education than equal increments of other sources of income; in 1984 and 1988, child support has a significantly larger effect than other income only on one of the educational measures, years of school completed.[5] Further, the 1979 ratios are significantly larger than the 1984 and 1988 ratios for all outcomes, whereas the 1984 and 1988 ratios are not significantly different from one another.[6] For instance, for years of school completed, dollar for dollar, child support income is 6.25 times as effective as other income in 1979, but only 3.75 times as effective in 1984, and 4.4 times, in 1988; for the probability of falling behind in school, it is 25 times as effective as other income in 1979 but only four times, in 1984, and five times as effective in 1988. Our results are inconsistent with the hypothesis that the change in the effect of child support income relative to other sources of income between 1984 and 1988 was larger than between 1979 and 1984. Actually, our results are the opposite of what we hypothesized: the ratios for all educational outcomes actually decreased dramatically between 1979 and 1984, and changed only moderately between 1984 and 1988. Although our results are opposite to what we hypothesized in this paper relative to the pace of change, they are consistent with our speculation in Hernandez et al. (1995) on the direction of change--that the effect of child support relative to other family income decreased during the 1980s overall.

Conclusion and Implications

The addition of an intermediate year (1984) to the previous two years of data analyzed (1979 and 1988) by Hernandez et al. (1995) allowed us to examine in more detail changes in the effect of child support on education during the 1980s. Since the 1984 CPS data were collected before the Child Support Enforcement Amendments of 1984 were implemented, the population of noncustodial fathers in 1984 was not affected by this stricter child support enforcement. Thus, as our results suggest, the effects of child support on educational attainment increased slightly between 1979 and 1984. This is consistent with our expectations, since we did not expect the effect of child support on education to change much from 1979 to 1984. Then, after 1984, the number of reluctant fathers paying child support would have increased because of stricter child support enforcement and the effect of child support on the educational outcomes decreased. These results confirm our expectations about the direction of the change in the effect of child support on education after 1984.

We find evidence to support our hypothesis that the change in the coefficients for child support received is larger between 1984 and 1988 than between 1979 and 1984. We also find that the magnitude of the effects of child support on education is not constant during the 1980s. The direction of change in the effect of child support on education from before to after 1984 may explain why the changes found in the effect of child support on educational attainment in Hernandez et al. (1995) during the 1980s are only marginally significant in some cases.

The policy implications of our findings are important. Our findings provide some evidence that child support income represents some unobservable characteristics of noncustodial fathers who pay it. Although reforms in child support enforcement brought more reluctant payers into the system, meaning that more families will receive more support, the effect of child support on educational attainment will be decreased with more enforcement.

Policy makers should be realistic about their expectations of any legislation that enforces parental responsibility. Some of the findings in this paper seem to suggest that when fathers pay child support voluntarily (without enforcement), the effect of child support income on education is stronger. The results in this paper further support the need for programs or policies that enhance the relationship between the noncustodial father forced to pay child support and his child(ren).

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Endnotes

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3. Computed from pooled data with a year interaction term on child support received.
4. We noted that the child support income variable and the other family income variable in the case of the probability dependent variables were never significant at the same time. These income variables were examined for correlation, but were never highly correlated in any of our samples.
5. Computed as a t-test on whether the ratio of the coefficients of child support to family income was greater than one (i.e., $\delta/\beta > 1$).
6. Using a pooled sample of two years, interactions of year with the child support and family income variables were created and a t-test between these interaction terms was conducted.

The Determinants of Conflict Escalation and Award Levels in Divorce Disputes

This paper applies a bargaining model with asymmetric information over risk type to divorce and child support disputes. Empirical evidence supports the hypotheses that conflict increases with the payer's income but decreases with the costs of continuing the conflict. The results also support the hypothesis that observable variables impact the final award but do not contribute to conflict escalation and that the conflict level has a positive impact on the amount of the award.

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Introduction

One consequence of the dramatic increase in the divorce rate is an increased burden on the courts and, therefore, taxpayers. Also, the escalation of conflict leads to greater time, financial, and psychological costs to both parties, adding to the increase in welfare loss from divorce. These costs can be particularly important for women, who are shown to suffer more financially as a result of divorce. In addition, Peters et. al (1993) suggests that self-negotiated contracts have a higher probability of the payer making the payments. If self-negotiated contracts are more likely to be self-enforced, the role of the courts is further reduced as court enforcement is not required. In an effort to minimize conflict, the 1988 Family Support Act was passed requiring all states to adopt standard child support guidelines. However, because awards are not completely explained by guideline variables, there remains a margin for disagreement and, therefore, in some cases, conflict.

What determines whether bargaining parties escalate their conflict? Can these factors be influenced by public policy? The bargaining literature provides insight into why settlement may not occur even when settlement could save both parties the additional costs involved in escalating the conflict. Players with similar information concerning the expected outcome of a mediated settlement should be willing to reach an agreement. However, players with asymmetricinformation may fail to settle for strategic reasons.

The related literature on civil torts proposes that asymmetric information could be a source of settlement failure[3]. When asymmetries exist, Hause (1989) argues that the informed party may have the incentive to reveal their information. For example, it might be in an injured plaintiff's interest to communicate the extent of her injury (perhaps by being examined by the defendant's doctor). In light of the expected jury award for such an injury, a bargain could be struck that avoids trial costs. Farmer and Pecorino (1993) point out, however, that risk preferences are not observable. In general, a risk averse person is likely to settle early to avoid the uncertainty of trial, while a risk neutral player is willing to accept the risk of court in an effort to receive her full award. The risk neutral party can't credibly prove she is risk neutral; going to court may be the only way to prove this to her opponent. This important distinction between information on risk type and other types of asymmetries is the reason that risk asymmetries are appropriate to examine in the context of divorce disputes in which both parties are expected to have full information concerning the specifics of the case.

Theoretical Model

This section summarizes the model found in Farmer and Tiefenthaler (1995) which focuses on both the magnitude of the final award and the probability of using the courts to settle disputes. If both parties have identical information then there is no rationale for parties to pay the costs of going to court only to expect a decision that could have been reached independently. Suppose both parties know that a court judgment should be $E(J)$. This value depends on the guidelines as well as on any power differences between the two parties (such as having an attorney). If we define C^M and C^W as the costs of going to court paid by the man and woman, respectively, then he expects to pay $E(J) + C^M$ and she expects to receive $E(J) - C^W$ if the dispute is settled in court. Suppose also that the woman is either risk averse or risk neutral, and only she knows her true type while he is assumed to be risk neutral[4]. If she is risk averse, then she is willing to settle at a lower level (y) in order to avoid the uncertainty associated with court. In a world with perfect information, he can differentiate between those willing to settle for y and those who demand $E(J) - C^W$. To avoid court costs he offers just enough to induce her to settle. However, if her type is unknown then his settlement strategy is less obvious.

Following much of the bargaining literature, the uninformed party (the man) has the power to make a take-it-or-leave-it offer. If she rejects this offer, the case proceeds to the next stage; there may be multiple stages such as employing an attorney, using a mediator, and ultimately, the final stage is court. The man chooses his offer strategically between an offer that he knows will be accepted and a lower offer, y, that will be rejected by a risk neutral woman. His decision is based upon the probability p that she will be risk neutral and reject the lower offer. Thus, conflict is escalated as his probability of making a lower offer rises.

Factors affecting his decision are total costs $(C^M + C^W)$ and the certainty equivalent, y. As costs fall and/or y falls, he is more likely to make the lower offer y. The value of y falls as the woman becomes more risk averse or as the variance of a trial rises. While her risk aversion may be a function of demographic variables, the variance of J depends on guideline variables including income, assets, marriage duration, the number of children and the custody arrangement. While all of these affect J, which, if any, affect the variance of J? Intuitively, as the income of the payer, I^M, increases, the variance is also likely to increase because there is more to disagree over. The number of children might have a similar effect. The predictions from the theoretical model on the determinants of the level of conflict (C.1 - C.4) are summarized below.

(C.1) Costs decrease conflict. Any cost of increasing the conflict such as higher court costs or attorney's fees encourages settlement.

(C.2) As the variance of the court's decision rises, *y* falls and conflict is escalated. Thus, higher income men and families with more children are more likely to use the courts. As the variance of the court's decision rises, the man is more likely to make a low offer to take advantage of the woman's risk aversion.

(C.3) Risk neutral women are less likely to settle. If the woman's income or job security, for example, are measures of her risk aversion and are **not** observable to the other party, we would expect lower income women and women without secure jobs to settle sooner.

(C.4) Observable variables have no effect on conflict escalation. Variables that are observable to both parties will affect the award but will not affect the ability to settle.

Turn now from the conflict level to the magnitude of the final award. The woman's final award is high in one of two cases: either she is risk neutral and goes to court to achieve $E(J) - C^W$ or the man makes the decision to make a high offer. Otherwise, if she is risk averse and his offer is tough, she receives only y. The award predictions (A.1 - A.2) are summarized below.

(A.1) For risk averse women, a higher certainty equivalent raises the award. (a) As the variance of the trial award rises, y falls. As the variance of the expected award rises with his income, not only does the probability of court usage rise, but women who do settle receive a lower average award. **(b) As risk aversion increases, y falls.** Risk averse women, on average, settle for less. Therefore, women with low incomes, insecure jobs, etc. are expected to settle for relatively less.

(A.2) The higher the level of conflict, the greater the award. Since only risk averse women settle early while risk neutral women are likely to reject tough offers and go to court, those who settle earliest and avoid conflict receive lower expected awards.

Data and Empirical Specification

The model's theoretical predictions are tested using the Stanford Child Custody Study which is a three wave, longitudinal study of 1124 families who filed for divorce in two California counties (see Maccoby and Mnookin (1992) for further discussion of this data set). While the data set includes 1124 observations, there are only 835 cases which include all the necessary information.

Recall that the model predicts that the level of conflict depends only on the costs of prolonging the conflict (prediction C.1), the payer's income and the number of children which may affect the variance of the outcome (prediction C.2), and the unknown portion of the risk aversion of the payee (prediction C.3). Any remaining variable that is observable to both parties should have no effect on the conflict; any other variables impact conflict only if they are unobservable (prediction C.4).

The level of conflict is measured in four levels: (1) the parties reached a self-negotiated agreement, (2) the parties reached an agreement through their lawyers, (3) a mediator assisted in the agreement, and (4) the case was decided in court. Although the majority of cases were worked out by the couple on their own, 18% of the child support awards and 10% of the spousal support awards were determined in court. It should be noted that in 92 of the 835 cases, the divorce was not yet final at the final wave of the study. For these cases, the level of dispute is likely underestimated. (See Farmer and Tiefenthaler (1995) for further discussion.)

Testing prediction C.1 is difficult since the data include only divorcing couples in California; hence, different states' divorce laws and court costs cannot be used as proxies for the costs of continuing the dispute. However, a proxy for these costs may be whether a party is involved in another relationship which may indicate that the individual has higher costs to prolonging the dispute. Data is also difficult to obtain for unobservable risk characteristics (C.3). The only variable unobservable to the husband but observable to the econometrician is the payee's assessment of her job security. In addition, observable demographic variables are included as regressors in the conflict equations, but these are not expected to have an effect on the conflict level.

The amount of the award is affected by the state guideline variables, variables which affect the power differential between the payer and the payee, the variance of the awards (prediction A.1a), and the level of conflict between the two parties (predictions A.1b and A.2). In California, the child support guideline at the time of the data collection is that the amount of the child support award should depend on the number of children, the income earned by each parent, and the amount of time the children spend with each parent. The spousal support guideline is that the spousal support award should depend on the duration of the marriage, the incomes of both parties, and their assets. The variance of the court awards cannot be directly tested since the data are from only two counties in California and, therefore, there is little variation in court awards. However, variance is likely to increase with the payer's income and family size as there is more to fight over. Note that income is also a guideline variable and, therefore, is expected to have a positive effect on the award. To capture the effect of the payer's income due to variance specifically, the payer's income squared is included as a regressor and is expected to have a negative effect on the award.

The power differential is proxied by dummy variables capturing whether one party has an attorney and the other does not. Whether or not each party was previously married is also included as an indicator of power. If a party has gone through the divorce process before, their knowledge of the process may enhance their power. Bargaining power may also depend on which party wants out of the marriage. The party that doesn't want the divorce is likely to have more power. Dummy variables are included to capture the possibility that one party wants the divorce while the other does not. The omitted category is that both individuals want the divorce. Finally, several demographic variables are also included in the regressions of the determinants of the amount of the award.

Results

The dependent variable in both conflict equations is coded as four categories with 0 being the lowest conflict level (a self-negotiated agreement) to 3 being the highest conflict level (court). Consequently, the ordered probit technique is the appropriate method for estimating the determinants of the level of conflict over child and spousal support awards. However, since the study was completed before all disputes were settled, there are censored dependent variables in the sample. Consequently, the conflict variable is measured as the level of conflict reached by the end of the study; the ultimate conflict level is **at least** that reached by the end of the study. This form of censoring can be accommodated in the ordered probit model by modifying the log likelihood function and all estimates. The specifics of the ordered probit estimation can be found in Farmer and Tiefenthaler (1995). The findings are summarized below.

According to the model, if the payer makes a tough offer in an effort to extract a risk premium from a risk averse payee, then a risk neutral payee rejects the offer and the level of conflict rises. This is more likely as the costs of escalating the conflict are low (prediction C.1), there is more to extract from a risk averse payee which happens if the variance of the decision rises (prediction C.2), and the payee is risk neutral which is unknown and thus rejects the offer (prediction C.3). Prediction C.1 suggests that the cost variables should have a negative impact on the level of conflict. If the payee is involved in another relationship, the level of conflict, as predicted, is significantly reduced. However, the payer dating has no significant effect on the level of conflict in either equation. From prediction C.2, we expect the payer's income and the number of children to have a positive impact on the level of conflict. The results indicate that the payer's income has a significantly positive effect on the conflict level in both equations[5]. The number of children has the expected positive effect but is insignificant in both equations.

Prediction C.3 implies that unobservable variables that proxy for the risk neutrality of the payee should escalate conflict. The payee's income and job security are included in the regression as proxies for the risk neutrality of the payee; however, it is likely that these variables are observable to the husband and would, therefore, be insignificant. The payee's job security is

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insignificant in both cases while payee's income has a negative and significant effect in the spousal support equation but is insignificant in the child support equation.

The theory predicts that settlement failure occurs only when there is asymmetric information. Since the facts of the case as well as most demographic variables are known by both parties or would be credibly communicated, it is only court costs, the variance of court decisions, and unobservable risk aversion that are potential sources of settlement failure. The empirical results provide some support for the hypothesis that only these variables affect the level of conflict. Education of the payee has a negative and marginally significant effect on the level of conflict. Several other demographic variables (including age, religion, and race) were initially included; however, because none of these variables had even a marginally significant effect on the conflict in various specifications of the model, they were dropped from the analysis. Because these variables are observable to both parties, the model predicts that they have no effect on the probability of going to court.

We turn now to the model's predictions concerning the magnitude of the awards. Because many payees receive no child support or spousal support there is left censoring at zero in the dependent variable. Consequently, both equations are estimated using Tobit techniques to accommodate the censoring. Note that the samples are smaller in these regressions because the awards which are not finalized by the end of the study are omitted from the sample. Additional observations were dropped due to missing data on independent variables. As previously discussed, this omission may result in underestimation of the effect of the level of conflict on the award. Additionally, endogeneity of the conflict level is an issue that was addressed. These econometric issues as well as the estimation results from the conflict equations are found in Farmer and Tiefenthaler (1995). Table 1 presents the results from estimating the determinants of the magnitude of both child and spousal support awards.

The guideline variables (assumption), the power differential (assumption), the variance of the court awards (prediction A.1a), and the conflict level (predictions A.1b and A.2) are all predicted to affect the child support and spousal support awards. In California, child support guidelines include the number of children, the payer's and payee's income, and the terms of the existing custody arrangement. As expected, the number of children and the payer's income significantly increases the child support award, the income of the payee significantly decreases the amount of the award, and joint physical custody significantly decreases the award. If the payer has an attorney and the payee doesn't have an attorney the award is significantly lower. The payee being represented by an attorney when the payer isn't is not significant. Another source of power is understanding the divorce process. The results indicate that payees who have gone through divorces before receive significantly higher child support awards. Bargaining power may also result if one individual wants the divorce and the other doesn't. The child support results show the expected signs; however, neither result is significant. The payer's income squared has the expected negative effect on the award but is not significant. The level of conflict has the expected significantly positive effect on the amount of the child support award. A greater conflict level implies a more risk neutral payee and, therefore, a larger payment.

Table 1
Determinants of Child Support and Spousal Support Awards.

	Child Support	Spousal Support
Constant	-15.21	-733.37***
Payer's income	0.005***	0.0132***
Payer's income squared	-0.001	-0.001
Payee's income	-0.003***	-0.023***
Joint custody	-127.56***	
Number of children	141.87***	
Duration of marriage		0.053***
Couple owns home		126.43*
Attorney - payer only	-143.22***	-222.99*
Attorney - payee only	-7.78	-19.10
Payer divorced before	-29.93	-30.39
Payee divorced before	50.85*	30.18
Payer wants divorce	23.78	216.60***
Payee wants divorce	-31.72	-19.96
Payer - college degree	6.42	143.14*
Payee - college degree	53.13***	210.35***
Payer - minority	-39.87*	-148.39*
Payee - minority	-12.68	-23.16
Level of conflict	14.86*	206.54***
Observations	679	583

*, **, *** denote statistically significant at the 10%, 5%, and 1% levels, respectively.

The spousal support guidelines include both the payer's and payee's income, the duration of the marriage, and the couple's assets which are proxied by home ownership. As expected, the income of the payer significantly increases the award, the income of the payee significantly decreases the award, and marriage duration and home ownership significantly increase the award. If the payer has an attorney and the payee doesn't, the payee receives approximately $52 less per month. In addition, if only the payer wants a divorce he appears to have less bargaining power as he pays a significantly higher award. The level of conflict, once again, has a significantly positive effect on the amount of the award. Only a risk neutral woman would reject a tough offer and proceed to court; therefore, those who go to higher stages of conflict receive greater awards.

Conclusions

What determines the level of conflict in settling divorce disputes? In theory, players with similar information should be able to reach an agreement without incurring the costs of escalating conflict. Because risk preferences are not observable, the model predicts that settlement fails if the payer makes a tough offer in order to extract a risk premium from a risk averse payee and the payee is actually risk neutral and, therefore, rejects the offer. The rejection of the offer and, therefore, the escalation of the conflict is more likely to occur if the payee is risk neutral, the risk premium is large (the risk premium increases as the variance of the award increases), and the costs of escalating the conflict are low. In addition to providing predictions concerning the determinants of the level of the conflict, the model predicts that risk aversion also affects the amount of the award. Risk averse payees settle quickly to avoid the costs of conflict and, therefore, they are willing to settle for less.

The Stanford Child Custody Study is used to test the model's predictions. Estimations of the determinants of the conflict level indicate that the payer's income has a significantly positive effect on the level of conflict and the costs of continuing the dispute have a significantly negative effect on conflict. As expected, except for variance and costs, variables that are observable are insignificant; this finding supports the hypothesis that asymmetric information (unobservable risk aversion) is a source of conflict escalation and court usage. The amounts of the spousal support and child support awards are shown to be affected by the level of conflict, providing further support for the hypothesis that risk aversion has an effect on the dispute resolution process. Future empirical work which includes better proxies for asymmetric information on risk preferences that are unobservable (for example, a survey focusing on women's risk preferences) would be a valuable contribution. In addition, a national data set would provide better variables for estimating the effects of increasing court costs and variance in court awards on the level of conflict.

What are the policy implications of these results? The theoretical model provides several options for decreasing court usage for divorce settlements. First, the legal system should encourage both parties to reveal all relevant information (information about each other as well as information about the process). By resolving information asymmetries, couples are more likely to reach a pretrial agreement. However, since all asymmetries cannot be credibly revealed (such as risk type), policy-makers must also focus on the variance. If the courts adhere to the guidelines, the variance of the court awards is lower and a bilateral settlement is more likely. In addition, increasing court costs reduces the number of cases going to court.

Policy-makers may also be interested in influencing the amounts of child support and child custody awards. Women (more likely to be the payees) have been shown to suffer negative economic consequences from divorce (see, for example, Duncan and Hoffman (1985)). Consequently, for equity reasons or to decrease the welfare burden, policy-makers wanting to encourage larger awards have options other than simply changing the guidelines to increasingly favor the payee. First, the results indicate that if the payer has an attorney and the payee does not, the settlements are lower. Therefore, increasing government legal aid to payees in divorce disputes is likely to increase spousal support and child support awards. In addition, the theory predicts that risk averse women are less likely to create conflict and, therefore, they settle for less. By decreasing the variance of the court's decisions, perhaps by more stringent enforcement of the guidelines, the risk premium paid by risk averse payees is also diminished and, therefore, awards increase.

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Endnotes

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3. See Bebchuk (1984, 1988) and Reinganum and Wilde (1986) for additional asymmetric information models. See Cooter and Rubinfeld (1989) and Farmer and Pecorino (1995) for surveys.
4. The restriction to these two types is unnecessary. See Farmer and Tiefenthaler (1995) for a discussion.
5. This result may also indicate that the players get positive utility from spite and spite is a normal good. Therefore, the level of conflict increases as income increases. However, if this were the case, we would also expect the payee's income to have a positive and significant effect on the level of conflict. Given that we do not observe the latter result, we do not believe spite is a major determinant of the level of conflict.

The Roles of Education and Regulation in Protecting Consumers: A Federal Reserve System Case Study of Uninsured Bank Products

Consumer educators have proposed a model of consumer protection that includes consumer education, legislation and regulation, and voluntary compliance by private sector manufacturers and service providers. In the current legislative environment, concerns are being voiced that too much regulation not only has created significant burdens on organizations and firms but also has resulted in information to consumers in increasingly complex ways. We need to explore ways to get information to consumers without using the traditional legislative/regulatory approach that spawns numerous legal interpretations and paperwork. Simultaneously, we need to develop educational programs that focus on core consumer information to combat concerns about information overload. The challenges and opportunities for consumer educators in this environment are striking.

Jeanne M. Hogarth, Federal Reserve Board[1]

The Situation -- What Do Consumers Know?

Sales of mutual funds at banks through broker-dealers and third party brokers have grown over the past several years, to $56.8 billion in 1994, up from $28.1 billion in 1991. Recent lawsuits (e.g. the $30 million NationsBank settlement (Knight, 1995)) and market surveys (e.g. Prophet Market Research & Consulting (Gasparino, 1996)) have attracted attention to sales practices and consumer awareness of the risks associated with nondeposit investment products sold through banks. For regulators, the question is: do consumers understand that not all bank products are insured by the Federal Deposit Insurance Corporation (FDIC)? Survey data indicates that they do not: as many as two out of five consumers surveyed thought that all bank products, including mutual funds and annuities, were insured by the FDIC, ranging from 18 percent (CFA, 1993) to 33 percent (SEC, 1993).

Associating banks with safe, guaranteed deposits is a message that has been driven home to consumers for years. Federal regulators were faced with the challenge of getting through to consumers that this message did not apply to every product sold at banks. The challenge was further compounded by the fact that the message needed to be conveyed in a way that did not place banks at a decided disadvantage relative to brokers or insurance firms in selling uninsured products.

Agency Responses

Guidelines were set in place by the Federal Reserve System, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation and the Office of Thrift Supervision that included voluntary disclosures and set limits on what were considered acceptable practices by banks in selling uninsured products (see Board of Governors, 1994 and Federal Reserve System, 1995). Requiring disclosures was predictable; what was different was that the Federal Reserve System also decided to launch a multi-dimensional, national education campaign to reach consumers with the critical, core message that not all products sold at financial institutions are insured by the federal government -- that a difference exists between insured deposits and uninsured investments.

The Federal Reserve System's educational program was, in fact, targeted to *both* consumers and sellers (banks). The objective of the consumer outreach portion of the program was to help consumers understand the differences between insured deposits and uninsured investments. The goal of the bankers training program was to provide an overview of uninsured product retail sales and to help them understand and comply with guidelines. It was in everyone's best interests, consumers and bankers alike, to do what was necessary to comply with the guidelines -- a result that would help ensure that bankers were dealing and communicating appropriately with consumers.

The Consumer Seminar materials were developed by a team from the Board of Governors and from the Reserve Banks in Boston, Minneapolis, and Dallas. Four core messages were developed: mutual funds are not deposits; mutual funds are not FDIC insured; mutual funds are not obligations of or guaranteed by banks; and mutual funds are subject to investment risks, including the possible loss of principal. Seminar resources include a prepared script and visuals, an eight minute video, and information on how to plan and implement a consumer seminar. Materials for consumers include the following handouts: a glossary of terms; checklists to help consumers determine whether uninsured products are right for them; a worksheet to compare fees for mutual funds; a bookmark that highlights the four key points; and a list of regulatory agencies to contact with problems or questions. As of the end of February, 1996, 64 seminars have been conducted by Reserve Bank staff throughout the System, reaching over 5200 consumers. Over 8000 copies of the video have been distributed to banks and community education groups.

The bankers' training program resources include: a computer slide presentation; script; a participant resource notebook with supplemental information and documentation to help with voluntary compliance with the interagency guidelines; and compliance checklists to help bankers review the procedures and materials they use in selling uninsured products. Bankers are also encouraged to obtain a copy of the video for use in their customer education efforts. Forty-seven training sessions by Reserve Bank staff reached 1340 bankers; 5800 copies of the compliance checklists have been distributed.

As a result of the seminars, consumers understood more about the products their banks offer. Over 90% (up from 65%) understood that some bank products are not deposits. Ninety percent of participants understood that mutual funds and annuities sold at banks are not insured by the FDIC and that these investments are not guaranteed by the bank, up from 65% and 70% respectively when surveyed prior to the seminars. After the seminar sessions, more consumers also understood that mutual funds involved risk of principal loss. Bankers reported feeling prepared to deal with disclosures and compliance issues as a result of their training sessions.

Impact

Educational programs seem to work, given that consumers attend them. What is the situation among other consumers? In October and November, 1995, Michigan's Survey Research Center collected data from 1007 households on their understanding of uninsured bank products. Specifically, consumers were asked whether or not Certificates of Deposit (CDs), annuities, and mutual funds were covered by FDIC insurance. Furthermore, they were asked about other risks associated with nondeposit products: whether mutual funds were considered deposits in the bank, whether mutual funds were guaranteed by the bank, and whether mutual funds purchased at banks and brokers could lose money.

Persons who plan to buy a mutual fund are more likely to understand FDIC coverage and other risks; 61% of persons who plan to buy mutual funds understand that funds are not covered by FDIC, compared to 22% of those with no plans to buy. Over half (57%) of those persons who do not currently own mutual funds but plan to buy them understand that they are not covered by FDIC.

Owning an asset is associated with better understanding of the risks of that asset. Two-fifths of respondents who owned mutual funds understood that these are not FDIC insured; among respondents who did not own either a CD, annuity, or mutual fund, only 13% understood that mutual funds are not FDIC insured. In a multivariate framework, ownership accounts for much of the variation in understanding among respondents. Among non-owners of a given asset, higher levels of education are associated with higher levels of understanding of the measures of risk.

Only about half (48%) of all respondents correctly identify that CDs are FDIC insured. One out of seven (14%) respondents correctly identify that annuities sold at banks are not FDIC insured. One-fourth (25%) of respondents correctly identify that mutual funds sold at banks are not FDIC insured. Also, while the majority of respondents understand the potential loss of principal associated with mutual funds, a higher proportion of respondents understand this potential loss when mutual funds are purchased through a broker (67%) than when funds are purchased through a bank (55%).

Many respondents were uncertain about the risks associated with bank products: 49% were uncertain about FDIC insurance for CDs, 67% were uncertain about FDIC insurance for annuities, and 57% were uncertain about FDIC insurance for mutual funds. If a respondent was uncertain about FDIC insurance for CDs, he/she was more likely to be uncertain about FDIC insurance on annuities and mutual funds. Most respondents were uncertain on three of the other four mutual fund risk measures in the survey.

What Does the Regulation-Education Continuum Look Like?

This case study has shown that although consumer education works for those exposed to it, there is room among the general public for improvement in their understanding of the risks associated with nondeposit bank products. The question becomes how do you protect these consumers -- through education or through regulation?

What are the determinants of when to implement regulations and when to implement an educational program? How does the level of consumer costs and benefits weigh in? How does the complexity or technological sophistication of the issue factor into the decision to educate or regulate? Furthermore, who do you educate -- buyers only, sellers only, or both? And how do you reach both sides of the marketplace. Finally, what can consumer educators, regulators, and sellers do to determine the optimum mix of regulation, infonnation, and voluntary compliance in order to protect consumers?

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This Deregulation May Be Hazardous To Your Health

Information and education about specific consumer problems are often insufficient because challenges facing consumers exceed the resources they have as individuals. Education about the origin of regulation has more potential. A "consumer purpose test" is a crucial first step to see if consumer defence is a public good. As an example, a regulatory framework for fair markets can protect the consumer from friends and foes alike. None the less, on practical grounds a realistic prospect is "perfect perversity".

Robert R. Kerton, University of Waterloo[1]

Regulation: The Long and the Short of It

Short carrots. Why would the consumer need protection from short carrots? Perhaps Hollywood has the answer. Several years ago a camp movie received attention because it was so bad it was being considered for distinction as the worst film ever made. Its title? "The Attack of the Killer Tomatoes." Can this explain why amendments to Canada's grading regulations for fruits and vegetables would set a minimum length for imported carrots? Were consumers out in the streets demanding protection from the attack of the short carrots?

Of course not. The regulation promulgated "to protect consumers" served only to protect domestic carrot producers from competition.[2] Consumers are "protected" from lower prices and competitive quality. The regulation is a clear illustration of the way that producers can twist the consumer protection argument to achieve an end that can best be described as perfect perversion. If you understand perfect competition you must also understand perfect perversion. How is it achieved?

The GRAS List

Machiavelli instructs the Prince that there are seven rationales for intervening in the marketplace. The first five come under the general heading of "Market Failures". These are five reasons for the failure of a free market, so each is a rationale for regulation. The five: 1. externalities, 2. monopoly, 3. information deficiencies, 4. undersupply of a "public good", 5. incomplete markets. The other two rationales come under the heading of "equity", a desire to bring about fairness: 1. distributional goals, and 2. merit goods. These seven rationales are, from the point of view of economics, Generally Recognized as Sound (GRAS). What the Prince must do, and what every lobbyist must do as the first step, is choose a rationale from the GRAS list so it can be deployed to justify a regulation. The second step is to help draft the regulation. After all, who but the AMA has the expertise to decide on the quantity of doctors to be allowed a license to practice? Milton Friedman used the example of the hypertrichologists of Connecticut who sought to license who would be allowed to ". . . remove excessive and unsightly hair with the solemnity appropriate to their high-sounding title" [Friedman, 1962: p.139-40; from Gellhorn].

If the Prince is to achieve the ultimate condition of perfection, a third step is required: one must gain the right to administer the regulation . . . preferably at public expense. The carrot example serves well: border guards are to be paid by the public to check for terrorists carrying concealed carrots.

Some Magnitudes

Under "free trade" U.S. consumers gain the benefits from imported steel, right? Not exactly. The President of Stelco, recently demonstrated that to get product into the U.S. market it takes a report of 55,000 lines of computer entries. Is this an unusual example? Hardly: one diligent effort to count non-tariff regulations was by made two independent teams in the European Union. The effort was abandoned when more than 100,000 of these regulatory barriers had been identified (European Commission, 1988).

Regulations: Friends or Foes of Consumers?

Lobbying is the art of concealing the public interest from the public. The easiest way to dress a wolf in sheep's clothing is to clothe the real objective in the consumer interest. On this basis, tens of thousands of regulations will fail a consumer purpose test. If the public could receive the necessary education about which rules to abolish or retain, deregulation would be a clear benefit to consumers.

What about rules that autos must have brakes? What about safety and efficacy tests for new medicines? When Dr. Frances Kelsey of the FDA refused to allow Thalidomide onto the U.S. market - in the face of enormous industry pressure - she saved hundreds, probably thousands of U.S. families from the characteristic birth defects so evident in Germany, France, Canada and many other countries. With this second type of example of regulation we find a clear consumer purpose. The consumer's problem with regulation is the same as The Little Red Riding Hood problem: is the new regulation consumer-friendly or is it a hungry foe wearing a consumer-friendly suit?

Deregulation: Wolf or Sheep?

If consumer education is successful, consumer-unfriendly regulations will be removed. The price of steel, and carrots will go down, while quality and price may improve. But that is not the only prospect: the wolves may be first in line in Washington because they see an urgent need to remove some binding restraints, some of which are amply justified. Remember the deregulation of Savings and Loans (S&Ls) in the 1980s. The change made it easier for charlatans and thieves to get their hands on one of the most attractive incentives in existence: other people's money. A moral hazard problem already existed with deposit insurance but deregulation allowed as few as three persons to own an S&L. With deregulated supervision these owners could lend to related parties while leaving the risk with the Federal Deposit Insurance Commission (FDIC). If the borrowing company struck it rich, its owners did too, paying back the loan. If not, the company declared bankruptcy and FDIC got to reimburse depositors at the S&L. The looting was not small: over 500 billion dollars in most estimates. That's enough for the U.S. to pay its outstanding bill with the United Nations, provide clean water to every village in India, and still have 460 billion left over for health and education programs at home.

There is an important point here about the targets for deregulation, a lesson clearly illustrated by the response of the bank robber Willie Sutton to the question "Why do you rob banks?" His answer: "Because that's where the money is." Why do we change S&L rules instead of deregulating licenses for hair pluckers? The wolf in sheep's clothes is back, this time seeking deregulation. The Red Riding Hood problem returns, with an important difference. Economics teaches that the sub-set of regulations which actually serve the consumer - say by keeping thalidomide off the market or by keeping scam artists from looting S&Ls - those rules may be special targets for deregulation. The reason is that they are binding constraints whose release is worth billions of dollars. In practice, Mr. Wolf is probably more democratic about whom he will devour, but the economics means that deregulation will target those regulations that actually serve consumers. This is the second path to perfect perversion.

Who Wins With Regulation? With Deregulation?

The lesson is that anyone who is doctrinaire about deregulation (or regulation) always being good or bad is part of the problem. The outcome depends critically on whether the original regulation was privately inspired or consumer friendly. The Red Riding Hood problem has the following possibilities:

Payoffs To RRH From Needed, Not Needed Policies

	Regulate	Deregulate
Sheep dressed as sheep Regulation not needed by RRH	1 RRH Loses	2 RRH Wins
Wolf dressed as sheep Regulation needed by RRH	3 RRH Wins	4 RRH Loses

Industry-inspired regulations exist in Box 1 harming Red Riding Hood. If these are removed, as in Box 2, she wins in a world of transparency where things are what they purport to be. Box 3 represents the case where an effective regulation, well administered, keeps the wolf from thriving at RRH's expense. If one moves from Box 3 to Box 4, a necessary regulation is removed and so, in the end, is Red Riding Hood.

Policy

In America much of the debate is dominated by persons or groups with a doctrinaire bent. Policy though, is too much in the hands of lobbyists with well specified targets. In developing countries fewer regulations exist, yet some of the earliest rules are dedicated to maintaining the quality of exports (especially food). The sorry state of markets is partly related to the inability to offer what the U.N. Secretary-General calls the "irreducible minimum of consumer protection legislation, covering physical safety ..." (United Nations, 1993). The European Union (which, in contrast, has "too many" regulations) has a logical policy. In the trade area - after the "Cassis de Dijon" case in 1985 - regulations are permitted if they have a health and/or safety function. This is a practical start. All countries need more education to protect consumers from (bad) regulations. This is a demanding task because it needs to move people from the ideological position that regulation is "good" or "bad" to an open-minded assessment of the following: Does the original regulation pass the consumer purpose test? If so, is it efficient in achieving its objective? Is some other method superior?

Some regulation is clearly needed. We need, for example, some rules to ensure that contracts can be enforced, that weigh scales are truthful and so on. And just as the defence of a country is a public good so too, is consumer defence. If one consumer finds from the FDA that thalidomide causes birth defects, other consumers can use that information too, without loss to the first.

Scale economies in search are also important. For any individual, the degree of difficulty in a consumer choice, d, depends on the complexity of the decisions, C, and the decision-making resources, R, available to the consumer: $d = C/R$. "Education" increases R, thereby decreasing d, clearly a general improvement. Yet highly complex decisions like the use of Thalidomide require more investments in R than anyone can make as an individual.

The forces explaining difficulty (d) also explain why there will always be a need for some regulations protecting consumers. Thus there will continue to be the sheep's clothing of consumer protection in which a wolf can conceal the true intent of his quest for regulation . . . or deregulation. The rewards for regulatory "success", millions of dollars or more, are often far greater than a private firm could earn producing real goods and services to meet consumer needs. It is not only the consumer who loses: some firms lose too, especially those which would supply superior goods and services in a fairer marketplace.

Daunting is the task of educating consumers about their own interests in deregulation. But the multitude of wounds - ranging from the small nicks from small carrots to major hemorrhage from S&Ls -provide the lesson that the benefits from avoiding perfect perversion are high indeed.

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1. Professor, Department of Economics, Waterloo, ON, Canada N2L 3G1.
2. This is not different from the main point in Stigler's classic "The Theory of Regulation" 1971.

Consumer Interests Annual *Volume 42, 1996*

Welfare Reform: Issues, Implications & Public Policy

This paper provides information regarding welfare program components, reform issues, state AFDC program waiver experiments, desired welfare reform outcomes and justification for involvement of family economists in public policy.

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Introduction

The Board of Human Sciences (BoHS) of the National Association of State Universities and Land-Grant Colleges (NASULGC) established a Special Task Force on Welfare Reform. The Task Force works with Terry Nipp from AESOP Enterprises--a Washington-based legislative liaison group hired by NASULGC to represent the Association's interests with Congress.

The initial intent of the Task Force[5] was to focus the experience and expertise of the administrators of programs in the human sciences--within the land-grant system where special interest in children, youth and family issues are paramount--by providing input and responses to legislation addressing welfare reform.

The intent of the current Task Force[6] is to expand beyond the initial response orientation, to write a white paper/manuscript that can be disseminated to academic, legislative and lay audiences. The overall objective of the white paper is to provide an understandable, usable document of relevant literature, program components and issues with implications for recipients, program providers, administrators, researchers, educators, legislators and citizens.

Current Program Components and History

Welfare Program Components

Major federal programs affected by welfare reform legislation currently under consideration are discussed in the Congressional Digest (1995: 166-7).

Aid to Families with Dependent Children. The AFDC Program provides income in the form of cash payments to families with children. Their need must be a result of parental unemployment, absence, death, or incapacity. Additionally, need is based on income standards determined by each state. Originally designed for short term use, it was to support families until they could become economically self-sufficient. Federal and state governments share the costs of the program, but the share paid by each varies, as does the amount paid.

Child Support Enforcement. The CSE program was initiated in 1975 to increase child support payments and reduce AFDC payments. The program also is designed to locate the absent parent and increase the number of support orders. The federal government reimburses each state a portion of the cost of administering its CSE program and refunds to states most of the costs for developing a state system for locating the absent parent and pays the majority of medical laboratory costs of establishing paternity.

Food Stamps. Program provides low-income households with coupons that can be used as cash to purchase food. Food stamps are designed to make up the difference between the amount of food that the household can purchase with cash/income and an amount of food judged to be sufficient to meet the requirements of a low-cost diet (based on the USDA's Thrifty Food Plan). The federal government pays the food stamps.

Foster Care and Adoption. The food stamps for states to be able to provide foster care and adoption assistance for children who would otherwise be eligible for cash aid under AFDC or Supplemental Security Income (SSI), the Federal Foster Care and Adoption Assistance program partially reimburses states for administrative, training and child placement costs. The federal matching rate, nationwide, averages slightly less than 60 percent.

Job Opportunities and Basic Skills. The purpose of the Job Opportunities and Basic Skills (JOBS) Program has been to give AFDC recipients an opportunity to obtain education, training and employment so they could avoid long-term welfare dependency. JOBS offers specified educational services, job skills training, job readiness, job development and placement. It provides matching funds for JOBS-related child care, and makes transitional child care and medical services available to persons leaving AFDC for work. The JOBS program is funded through a cost sharing arrangement between Federal and state funds that varies by state.

Medicaid. The Medicaid program is used by states to provide health care to low-income families with children, the elderly poor and disabled. Costs of the program are shared by federal and state governments on the same basis as AFDC--inversely related to state per capita income. States are required to provide Medicaid to all AFDC and most Supplemental Security Income (SSI) recipients--twelve states still provided Medicaid under more restrictive eligibility established before SSI. Congress, in 1986, extended Medicaid to children and pregnant women in low income families. States determine covered medical services and reimbursement to providers.

Supplemental Security Insurance. In 1974, SSI replaced separate programs assisting the elderly, blind, and permanently disabled. In 1994, the program began guaranteeing a minimum income to the blind, disabled or elderly--over 65 years old. The federal government pays the full cost of the minimum income level. About half of the states supplement the federal minimum level.

History of Programs

Welfare legislation that supports programs in place today have a long history in the United States. They can be grouped according to support for income and employment, food, health and housing. Highlights of these programs cover more than the last 65 years.

During the 1930s.

- 1935 Title IV of the Social Security Act created Aid to Dependent Children (ADC) for women who were widowed.
- FHA begun to insure mortgages; public housing programs began.
- Roosevelt avoided the issue of health care believing the medical profession would not agree on national health care.
- 13 million received food assistance via Food Stamp Plan which disposed of agricultural surpluses and prevented hunger and poor nutrition among the poor.

During the 1940s.

- Veteran's Administration (VA) housing program established as part of Government Issue (GI) Bill of Rights; Housing Act of 1949 was aimed at clearing slums.
- Poor nutrition identified as major factor in lack of healthy recruits for defense.
- National School Lunch, School Breakfasts, Child and Adult Care and Summer Food Service Programs begun to safeguard health and well-being of the nation's children.

During the 1960s.

- President John F. Kennedy initiated programs to fight poverty and encourage vocational training/education as a means to develop employable skills among welfare recipients.
- War on Poverty began with the Economic Opportunity Act of 1964. It provided individuals with employment opportunities.
- Modern Food Stamp Program was authorized in 1964.
- Housing Act of 1965 consolidated federal housing into new a cabinet level department--except for rural housing.
- Medicare was approved with hospital and physician insurance a part of the program.
- 1965 Medicaid provided to poor people--limited health services.
- The Work Incentive (WIN) programs created in 1967, required worker training and work incentives for all AFDC recipients.
- Housing and Urban Development Act of 1968 reaffirmed goal of decent homes for poor citizens.

During the 1970s.

- Utah's Work Experience and Training (WEAT) demonstration project successfully put welfare recipients to work.
- President Nixon called for an end to hunger. 1970 Food Stamp Program became a nationwide federal entitlement program with uniform standards.
- 1971 The WIN law was amended. Thereafter, it required all able-bodied AFDC recipients to register for the program.
- Supplemental Security Income (SSI) passed in 1972 to guarantee income to blind, disabled or elderly persons.
- 1974 Women's, Infants and Children program (WIC) was established with annual funds returning $3 to every dollar invested; counties were required to offer food stamps.
- Housing and Community Development Act

made block grants to allow for housing for low income families and provided for rent supplements.

- Medicare and Medicaid technically joined Health Care Financing Administration in Department of Health Human Services.

During the 1980s.

- President Ronald Reagan strongly supported work requirements for AFDC recipients. In 1981 Congress was not willing to require states to operate a Community Work Experience Program (CWEP) as a part of the federal condition of AFDC.
- In 1987 Manpower Demonstration Research Corporation reported positive employment and earnings gains for welfare recipients and some reduction in state welfare outlays.
- The growing success of state welfare-to-work experiments translates into passage of the Family Support Act of 1988 which created the Job Opportunities and Basic Skills (JOBS) program which provided income for work in an attempt to move single mothers off AFDC.
- Earned Income Tax Credit (EITC) helped low income families get off of public assistance.

During the 1990s.

- A national economic down turn impeded state efforts to implement the JOBS program.
- States begin exploring new options such as "family caps" and relaxed earnings rules.
- 1992 President George Bush's State of the Union address encouraged states' experimentation with welfare programs. Thereafter, the Department of Health and Human Services granted nine waivers to states for welfare experiments.
- January, 1994 U.S. Supreme Court struck down California's welfare experiment that limited benefits paid to welfare recipients who were recently new to the program from out of state.
- In June 1994 President Clinton introduced the Work and Responsibility Act, a $9.3 billion reformed welfare program. Its major proposals were a two-year limit on welfare benefits and transition into the workplace or community jobs.
- Leland Bill authorizing use of electronic transfer (EBT) of food stamp credits and created opportunities for employment, training and purchase of homes passed. Maryland and Minnesota are two states using and testing the EBT systems.

Welfare Reform Issues

AFDC mothers have a difficult time locating and maintaining employment. The reasons are generally well known. First, welfare guarantees a level of income support that creates a work disincentive by competing with earned income/wages--especially given the low earning potential of many AFDC recipients. Second, work related costs, such as child care and transportation, reduce or are greater than income available from employment earnings. Third, most AFDC recipients lose non-cash benefits of AFDC when they take a job. Finally, even with the assistance of training and placement programs, there are not enough stable, entry-level jobs available to employ the number of heads of households on welfare. Ideally, current reforms focus on ways to remove disincentives and promote self-sufficiency.

Welfare Reform Proposal Policy Issues

The major policy issues of past and current reform proposals are outlined and discussed in the Congressional Digest (1995: 164-5).

Incentives to Work. When cash benefits are received, two factors affect a recipient's employment incentive. First, a guaranteed income with zero hours of employment provides an economic incentive to not work, especially if you lose one benefit dollar for each earned income dollar. The income level attainable from employment is affected by the rate at which the income guarantee is reduced as earnings increase. When benefits are reduced at high rates, they discourage work for reportable earnings and encourage work for cash or in the "underground economy." To improve work incentives, the rate at which benefits are reduced as earnings rise can be lowered. However, that allows welfare eligibility at higher income levels and results in increased expenditures on welfare programs unless there is a larger financial benefit to recipients who work more. The Earned Income Tax Credit (EITC) enhances work incentives for families with low earnings and avoids higher AFDC costs and caseloads. EITC costs are built into the income tax system. In 1993, Congress expanded the EITC. The EITC increases as earnings increase until annual earnings reach $6,000. It declines for income above $11,000. If the EITC is greater than the income tax liability, the excess amount is paid to the earner; otherwise, it reduces the amount of taxes owed. Work requirements can alter work incentives if the recipient loses all or part of an income guarantee if certain conditions are not met, e.g., mandatory, unpaid training or work required to receive benefits.

Employability of Recipients. Historically, reform measures have included programs to increase employability by the provision of employment services (e.g., remedial education, job search assistance, skills training) and child care. Yet few recipients, given the extent of their educational and skill deficiencies can make short run increases in employability sufficient to move them to stable employment at a wage that makes earnings a realistic advantage over the guaranteed benefit level of welfare.

Impact on Labor Markets. The "workfare" approach requires recipients to work for benefits. Concern that such programs would displace other workers can be alleviated if jobs could be identified or created that would not otherwise be filled--possibly through block grants that allow states to design programs tailored to their own labor market conditions. A second approach for creating jobs for welfare recipients is by reducing employers' costs by subsidizing the wage paid to the worker. The Targeted Jobs Tax Credit (TJTC) was a now-expired example. This approach could displace other low-skilled job seekers. There has been limited interest by employers.

Incentives for Parental Support of Children. Some argue that AFDC payments to unwed mothers provides an incentive for out-of-wedlock births. Additionally, mothers who give birth to more children while on AFDC are usually eligible for larger benefits. These problematic incentives can be lessened by extending AFDC to low-income, two-parent working families. In 1975, Congress determined to aid these families through the EITC. Food stamps are also available. Since 1990, states are required to cover families with two unemployed parents under AFDC, but program restrictions keep them from qualifying. Other attempts to lessen the AFDC child bearing incentives is to require parental support of children through parent locater services, paternity determination and child support collection. Current proposals deny AFDC to unwed minors and restrict or disallow extra benefits for children born in families already on AFDC.

The Well-Being of Children. While the intent of AFDC was to avoid institutionalization or foster care for poor children and to contribute to their nourishment and shelter, there is a growing concern that extended support through AFDC perpetuates poverty. When children live outside the mainstream economy there may be a poverty culture that develops. Discussions regarding limiting the length of AFDC program participation raises questions about how the program and program limits affects children's well-being. The loss of AFDC could elevate incidences of child abandonment and abuse and result in greater use of institutional care for children. Work requirements increase demand for child care and raise questions about the availability of acceptable quality care and relative advantage of employment verses home time for mothers of infants and small children. The potential consequences of limitations on receipt of AFDC would have to be weighed against the potential problems of long AFDC stays.

State Welfare Experiments

The Congressional Quarterly Researcher (July, 1995) and U. S. General Accounting Office (GAO) (July, 1995) report states' attempts to reform welfare.

- Vermont stops benefits after 30 months. Recipients are placed in public service or community jobs.
- Utah pays a one-time cash payment rather than monthly checks and access to child care, health care and other services.
- Oregon replaces welfare checks and food stamps with similar salary private sector jobs.
- Riverside County, California's program, Greater Avenues for Independence (GAIN), has saved $2.84 in welfare expenses for every $1 invested in the job-training program.
- New Jersey has implemented a "family cap," by restricting additional payments to mothers who give birth while on welfare in an effort to limit the size of welfare families.
- Forty-two states are experimenting with increasing the earnings exclusion so families can earn more without reducing their AFDC payment.
- Thirty states are creating jobs for AFDC recipients.
- Twenty-five states plan to implement the welfare cutoffs and work requirements proposed in a current welfare reform proposal.
- Several states are using electronic welfare cards similar to ones used by automated teller machines.
- Wisconsin's Republican governor, Tommy G. Thompson, initiated welfare experiments in 1988 with the "Learnfare" program, which cuts aid to families when the teenagers miss too much school.
- Maryland's families lose some AFDC benefits when they do not immunize their children or keep them in school and if they don't pay the rent on time.

- Ohio has financial penalties used to encourage school attendance of pregnant and parenting teenagers receiving AFDC.
- California's Republican governor Pete Wilson is planning across-the-board cuts in AFDC benefits.
- New Jersey has a two-year-old "child exclusion" rule, or "family cap," which denies additional cash aid to a parent who has a child while receiving welfare benefits.

Should major changes be left to the states?

- AFDC benefit levels are set by the states and vary quite dramatically. There may be a need for federal oversight.
- Under a proposed plan, states would control welfare programs, and the federal government would pay a greater share of Medicaid costs.
- In general, reform shifts responsibilities to the states for funding AFDC, food stamps and the special supplemental food program for Women, Infants and Children (WIC). The food stamps provision was retained at the federal level in the 1996 Farm Bill.
- Federal contributions to welfare programs would likely be block granted to each state.

Outcomes

The stated outcomes of welfare reform are

- Get individuals back to work.
- Strengthen families--assist children and youth.
- Reduce teenage pregnancies--increase paternity responsibility.
- Change the orientation of welfare.

Professionals working with families do not agree that the outcomes will be accomplished with the proposed legislation. Current welfare reform legislation helps to make these shifts in the system. Emphasis is on "deficit reduction" rather than maintenance of and improvement in people's well-being. The system shifts:

FROM:	TO:
Welfare maintenance	Temporary Assistance
Dependence	Independence
Federal determination	State determination (Block-grants)
Multiple programs	Combined Programs
Automatic entitlement	Restricted eligibility

Welfare Reform Agreements

There is broad agreement between Congress and the general public on the need for Efficiency, flexibility, responsibility, and fraud reduction. There is less agreement among the Congress and general public on how to accomplish the time limits, work requirements and deficit reduction.

The general goal of reform is to produce self-sufficient families, i.e., programs which require families to obtain, maintain and manage their total resource mix--personal, family community--in a way that serves the family and the economy.

Overview and Implications

Given the complex alternative incentives, disincentives and financial rewards inherent in previously attempted, current and proposed welfare programs, the growing welfare rolls and budget reduction concerns, what is there that family economists can do to respond?

Welfare Statistics

- In 1936, half a million people received AFDC assistance. Today 14 million people, two-thirds of them children, receive assistance. (Congressional Digest, 1995: 167)
- Findings indicate that 70 percent of all AFDC recipients will have spells of welfare that last for two years or less. Only seven percent of recipients who begin a spell of welfare receipt will have a spell that will last for more than eight years. (Congressional Digest, 1995: 167)
- After accounting for inflation, the average monthly AFDC benefit per family was $676 in 1970 and $373 in 1993, a 45 percent reduction. (Congressional Digest, 1995: 167)
- AFDC spending represents less than one percent of the Federal budget. (Congressional Digest, 1995: 167)
- Many of the people who were awarded child support payments did not receive the full amount they were due. In 1989, about half of the five million women owed child support payments received the full amount, about one-quarter received partial payments, and about one-quarter received none at all. (Congressional Digest, 1995: 167)

Overview of Welfare Reform

Aid to Families with Dependent Children --the nation's primary welfare program--was initiated as part of the Social Security Act in 1935. Originally, it was designed to provide temporary assistance to women with young children whose father has died. Today, the largest share of the welfare population is children in families headed by a single parent who is divorced, separated or never married. The increased number of recipients is credited to increased divorce rates, out-of-wedlock births and expanded eligibility.

Many are concerned regarding the lack of resemblance of current programs to the original intent. Current legislation focuses on removing disincentives to work and promoting self-sufficiency. Additionally, there is interest in changing the system, cutting Federal spending, consolidating programs, block-granting the funds to states and reducing eligibility.

Proponents feel the current system does more harm than good and encourages/rewards behavior that is detrimental to recipients and society. Opponents feel the proposed reforms cut programs for the poor without sufficient employment available, children will largely be the ones who suffer the consequences of currently proposed reforms and society will face even higher costs resulting form increased illnesses, premature births, crime, etc. Suggested alternative reforms would focus on expanding entry-level employment that is continuous and includes support for child care and medical services.

Implication for Actions

- Research findings need to be known and incorporated into the debate and resulting public policy.
- Reform needs to include benchmark and periodic measures of effects of policies.
- Professionals need appropriate skills and understanding to implement policy.
- A holistic approach is needed.

Policies will affect families in different communities and states in different ways. Welfare reform and the outcomes of family well-being has implications for professionals associated with family and consumer sciences. Both the consumer and family economics approaches are needed to add value to the discussion. When the programs are block granted, there will be a crucial need for baseline data. There is also a need for understanding policy formulation and education about policies. Thus working within our universities to increase the opportunities for students to have hands-on policy experiences seems prudent.

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Endnotes

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Consumer Information Meets the Information Highway: Old Dog - New Tricks?

An invited panel of representatives from government, academia, consumer advocacy and the private sector met to talk about the role of the information superhighway in consumer information. Based on their personal experiences, panelists described how they have changed the way they do their work in consumer information because of this new technology.

Lydia Shevchuk, Industry Canada[1]

Introduction

Consumer information (the "old dog") has long been a central tool of consumer practitioners. What happens when this old dog meets the technological world of the information superhighway? Can it be taught new tricks?

This was the central theme that four panel members discussed. Based on their area of expertise -- they were representatives from the government sector, private industry, academia and consumer advocacy -- they described how they have changed and adapted their work in consumer education and information in response to this new technology.

The session began with introductory comments by the moderator, Lydia Shevchuk from the Office of Consumer Affairs in Industry Canada who introduced the panel. Panel members were: Jane Schuchardt, National Program Leader for the Cooperative Extension System with the United States Department of Agriculture who represented the government sector; Karen Duncan, Assistant Professor of Family Studies at the University of Manitoba who was the academic representative; Sue Jacobsen, Consumer Affairs Manager for the NutraSweet Company (private sector); and Linda Golodner, President of the National Consumers League who represented the consumer voice.

Summary of Panelists Remarks

Jane Schuchardt, PhD

Using the situation of the fall closure of government offices, Dr. Schuchardt began her presentation by mimicking a government telephone ringing which goes unanswered. However, through the future use of the internet and other new electronic technologies, this should not happen again since it will be possible to have a government that is "partially closed, but virtually open."

Dr. Schuchardt described an initiative -- Americans Communicating Electronically (ACE) -- which aims to give each citizen access to government information resources and education through all electronic media. Currently, more than 20,000 people access the ACE information servers weekly.

While these kind of electronic projects have the potential to provide consumers with information about services, they present other risks. They could result in a reduction of personalized service and a widening of the gap between information have's and information have-not's. At the same time, information providers must ensure that posted information is kept current and that it clearly meets the needs of the audience it intends to serve.

While some surveys show that internet access is still limited to a small percentage of households, it is certain that this situation will be changing rapidly as new government programs allow greater public access. When this happens, it will be possible to provide information via electronic means.

Sue Jacobsen

NutraSweet jumped on the internet bandwagon when they saw it as a way for consumers to be able to communicate with the company. It was also clear that it was an efficient means for making product information widely available which could lead to savings in printing and distribution costs.

Ms Jacobsen described some early obstacles that had to be overcome -- ranging from technical aspects of obtaining domain addresses to content problems of finding information valuable to the readership. Current work involves putting more consumer product information on the site, promoting the internet address on all packaging and print materials, tracking internet correspondence and connecting to other relevant internet sites such as health and nutrition agencies, chat groups and government organizations.

Future work will involve maintaining the website in-house (now it is done by an outside consultant), increasing the amount of information available to consumers, creating useful marketing research surveys, and developing a more efficient way of tracking and responding to consumer enquiries.

The project started as a leap of faith, but now through a strategic approach it demonstrates both a quantitative and qualitative value to NutraSweet and its customers.

Karen Duncan, PhD

In teaching her consumer studies class this year, Dr. Duncan decided to introduce the idea of the internet and consumer information by giving an assignment which involved "surfing the net." Her students were from a generation that did not grow up with computers in schools, so there was some resistance to and inexperience with this new technology.

Their assignment was to find a news group, a website and another site of interest to them. They were to look at each site and critically evaluate it by asking who would use the information, how easy it was to access and how relevant it was. The purpose was to introduce critical thinking in relation to the quality of material available. A secondary purpose was to enable students to become comfortable with new technology.

Dr. Duncan noticed that the assignment encouraged people to share information and to work together to problem solve. Students collaborated on overcoming technical difficulties or coming up with creative solutions such as finding short cuts. Although her students did not like the assignment at first, they appreciated it afterwards. They developed a better understanding of what the everyday consumer faces in a world which can be overwhelmed by information.

Linda Golodner

While previous panelists spoke about the practical applications of the internet in their field of expertise, Ms Golodner introduced a new element into the discussion. Representing the consumer perspective, she mentioned four issues that are important for consumers in the world of the internet and the information superhighway. They are: privacy, parental control over content, intellectual property rights and fraud.

Privacy concerns cover the use and collection of information on the internet and the need for privacy standards. Parental control relates to the concern of parents to understand a technology that may not be familiar to them, but one that is increasingly used by their children. Ms Golodner described "net nanny" software that is being developed and work being done on establishing network standards as an alternative to censorship.

Intellectual property issues (particularly copyright) are not well understood by consumers especially in relation to downloading and distributing information. At the same time, the internet can be an important means for promoting artistic and creative endeavours.

Fraud is an area that is receiving increasing attention as more and more commercial transactions take place on the internet. Con artists are already using the internet for fraud and investment schemes have become popular. At the same time, on-line services are becoming available which allow consumers to report fraud and which link them to consumer protection agencies. Ms Golodner reminded the audience that the same rules that apply for other marketplace transactions (such as not giving out credit card numbers and reporting suspicious behaviour) also should apply for the internet. Consumers want the internet to be a safe place.

Question and Answer Period

Following the panel presentations, the audience had the opportunity to make comments or question panelists further. One participant observed that in-depth academic research is being replaced by information that is easily accessible on the internet. This raised the issue of evaluation of information and whether it is possible to verify the accuracy of information posted. Noting the growing popularity of web pages, one observer said that if you do not have a home page nowadays it's almost as if you forgot your underwear!

The session provided an opportunity to gain an increased understanding of the information highway and its use in consumer information. It allowed the audience to hear first-hand experience of people who use this new technology in their work and to better understand some consumer concerns.

Endnote

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A Loan Form Reconstruction Exercise

"We all agree that we'd like to see the loan form to be simple and straightforward and lay out for us exactly what it is you are going to do, what I'm going to do and how much this is going to cost in the end. When do I pay? How much do I pay? What happens if I don't pay? Are you going to refund my interest and just how does all that work out? And take out the nonsense." Wisconsin Panel member.

Richard Widdows, Purdue University[1]
Sugato Chakravarty, Purdue University[2]
Richard Feinberg, Purdue University[3]

Introduction

The stated purpose of the Truth-in-Lending Act (TILA) was, of course, to enable consumers to shop around for credit (15 U.S.C.A., 1601 et seq., Sec. 102(a)). In the consummation of the Act, the Federal Reserve Board's Regulation Z created the rules for disclosure of information the consumer needs to compare credit deals. In the Appendix to Regulation Z, model loan forms were offered upon which lenders could base their own forms and so stay within the rules.

While the usefulness of TILA is not challenged here, we would like to raise the question, do loan forms modeled upon the standard forms deliver the information consumers require to consumers' satisfaction? Put another way, would consumers, if given a choice, change the forms in any way, and if so how?

Given that loan forms are the personification of the TILA, such a question is relevant to the consumer interest. The transactions costs of the loan process are not trivial, either in terms of consumers' time and effort or lenders' production costs. If the loan forms used by lenders could be redesigned to do the job better, everyone stands to gain.

Methods

The loan form reconstruction exercise was part of a Consumer Panel project, carried out in four US Cities. The purpose of the Panel project was to assess consumer satisfaction with the banking industry. Preliminary results of the satisfaction study have been published elsewhere (Chakravarty, Feinberg and Widdows, 1995).

Briefly, the Panels consisted of twelve members, each of whom was a member of a consumer-oriented interest group. The Panels thus differed from the standard Focus Group, in which members are usually randomly-drawn consumers of a product. The methods of the Focus Group were followed, however, in that the scripts for the group sessions were similar, and common threads in the discussions were sought during the review of transcripts of the sessions.

For the loan form reconstruction exercise, the Panels were given a Bankers' Association approved loan form that was currently in use in a bank within their State. The form each Panel received differed slightly because of customization for the particular bank, but otherwise were essentially the same. The Panel was subdivided into groups of three or four persons for the reconstruction itself. Each subgroup was instructed that they could make any changes they wanted to the form. The subgroups then convened together and reported on what their deliberations. They were asked to turn in their forms with the changes on them after the exercise was complete.

To motivate the group, they were told that their changes would be taken note of by a bank educational foundation, and that what they were doing "could make a difference". This was the truth.

Results

While the course of the discussion differed between each of the groups, each touched on certain areas, to be described here. The areas are organized into three Tables below. Each group started its discussion of the forms with a question as to what they liked about the forms. The items mentioned are given in Table 1.

Three of four groups specifically mentioned the Federal Boxes as items they liked. In fact, no group criticized or even considered changing the Federal Boxes. The only other item to receive endorsement from at least three groups was the use of blue color as highlighter on the forms.

Table 1
What The Panels Liked About The Forms

IN	FL	KS	WI
Federal Box/ Sentences	Federal Box/ Positioning	Federal Box/ Positioning	
Use of Blue	Blue Color	Blue Color	
Readable	Readable	APR in Caps	Facts There
Font Size	Plain Language	Explanation of Terms	Explanation of Laws
Up Front	Understandable Examples		
Highlighting			
Well Structured			

Other than the Federal Box, the only items of form content to receive endorsement from any group were the supplemental terms and examples used. The panelists in general liked the format and presentation of the forms, and their level of language. As will be seen, the size was the only physical characteristic of the forms which came under criticism.

The panels voiced dislikes about certain things having to do with the forms during their discussions of the changes they would like to see. The dislikes are summarized in Table 2.

The most common dislike was the shift in language in parts of the form from plain language to legal language. This aroused suspicion in two of the groups. The members wondered if the shift to legal language was to protect the lenders' interest as opposed to the consumer interest. One group pointed out that things which seemed to be in the consumer interest were in small print. The other common dislike was the actual size of the form itself, which is long. Two panels found this intimidating.

While not exactly dislikes, all of the panels drew attention to terms which they found confusing or hard to understand on the forms. These are also listed in Table 2. Insurance stands out here as being something which was mentioned by three panels, and in each case with some suspicion. In this case the worry was that consumers were being subjected to pressure sales. Almost all of the terms mentioned on the forms were the subject of confusion to at least one panel, with the result that there were several calls for supplemental glossaries or explanations, as will be seen.

With regard to changes the panels would like to see made to the forms, perhaps the important thing in Table 3 is the dog that did not bark in the night: no-one suggested any change to the Federal Boxes themselves. Rather, there were suggestions to extend the concept of using Boxes for key items. Two panels wanted monthly payments to appear in a Federal-style Box. Two panels wanted to see a clearer link made between the Amount Financed Federal Box and the itemization of loan components, while a third wanted the itemization to be repositioned, but again, no changes to the Box itself.

The idea of clarification of items spilled over from the Boxes to other items. The Kansas panel in particular wanted several items to be in bigger type, and three of the panels wanted more attention drawn to consumer rights or Laws. Related to this were calls from two panels for use of plain language throughout.

A popular idea was the use of supplemental booklets to help the consumer understand the terms and examples used in the forms. Two panels called specifically for Glossaries of terms, and two wanted separate pages or worksheets for examples and calculations. One panel thought samples of filled out forms would help.

Table 2
What The Panels Did Not Like About The Forms

KS	WI	IN	FL
Legalese/ Changes	Verbiage/ Differences	Legalese In One	Two Forms
Paper Size	Small Print/ Consumer Rights	Length Examples	Clutter/
Use of Initial	Use of Red		
CONFUSION ABOUT TERMS			
Insurance/ Credit Property Optionality	Prepayment	Insurance/ Optionality Collateral	Insurance
Assumption	Other Charges	Cosigner	Variable Rate
Appraisal Fee		Assignment	APR
Public Official		Public Official	Finding Fee
Index Rate	Index Rate	Security Interest	

Table 3
Changes The Panels Would Like to See To the Forms

FL	KS	WI	IN
Box for Monthly PMT	Box for Monthly PMT	Have a Numbers Page	Link Amount Financed and Itemization
Reposition Itemization	Bigger Type: Pre-payment Balloon PMT	Provide Worksheet	Offset Calculations
Cross Refer to Laws	"Real Choices" (Clearer)		More Bullet Points
Split into Two Forms			Separate Glossary
Separate Glossary	Do on W.P. Customize Use Separate Forms		Terminology on Back
Examples Booklet	Only Plain English	Lower Level Language	
Sample Complete Form	Special Attention/Options		
	Confirm Read Reverse Side		

Finally, the idea of a multipurpose form came under fire from two of the panels. One wanted to know why the whole process was not computerized, while both wanted different loan types split out into customized forms.

Concluding Comments

The intent of the TILA was to make it easier to shop around for loans. Loan forms contain the information which enables this to take place. It is encouraging that the flagship of Regulation Z, the Federal Boxes, received indirect endorsement from these panels. It should also be mentioned that only one panel took up the matter of comparison shopping directly. It suggested that a worksheet be provided which was capable of being used to draw up side-by-side the key items of loans so that consumers could see right there which was the better deal.

The message that emerged from the panels was: when it comes to loan forms, provide one for each type of loan, make it plain language throughout, and provide supplemental forms of booklets with examples of calculations, sample filled out forms and glossaries of terms. For the most part, keep the format of the forms similar to those examined here in terms of print, color, and positioning, but make the size 8 1/2 by 11. And, do not mess with the Federal Boxes.

The major addition to the forms that consumers wanted to see was the use of a Box for monthly payments. Other than that, the concern was more with clarification of terms. And be sure that consumer rights receive equal treatment with other terms.

A Coda

Despite the cautious endorsement of the forms, panels expressed some doubts as to whether consumers really would be able to absorb the information on the forms sufficiently to make comparisons between loans. Each of the panels at some point became involved in a discussion of the loan process, the complexity of the forms and the role of the loan officers. The implication of these discussions was that customers get too confused or railroaded in the process and may as a result make a quick, suboptimal decision.

Thus, KS: the loan officer's role is vital in the process, and customer service persons may be needed to help the customer deal with the process. WI: we fear that the customer ends up relying on the loan offices to fill out the forms because of the complexity. It should not fall onto the consumer to find things out. If it does, they will just sign anything. IN: the consumer needs to be able to cross-references loans, otherwise they will just sign the one they are dealing with. FL: there needs to be facilities and aids where the consumer can sit alone and figure out the forms. Even so, they will still need help in the filing process.

The final comment, then, is this. The forms are doing a good job as vehicles for TILA, and with changes along the lines suggested by the panels will do an even better job. However, the process of loan-making needs to be looked at in conjunction with the forms if the ends of the TILA are to be achieved.

Reference

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Endnotes

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Into the Shark Tank: Surviving the Loan Closing Process

One of the earliest pieces of consumer credit legislation is the Truth in Lending Act (TiL). The Act was intended to provide consumers a more efficient means of comparison shopping for credit. In practice, however, the information provided by TiL can easily be obscured. This paper discusses several techniques by which lenders may adhere to the letter of the law and yet still thwart its intent.

Paul L. Camp, Purdue University[1]

Much current economic theory regarding competitive and open markets explicitly assumes perfect information on the part of market participants (Case & Fair, 1989; Scott & Nigro, 1982). Indeed, consumers' ability to act in their own best interests and make rational decisions depends upon their access to accurate information. In an effort to improve the quality of information provided to borrowers, Congress approved the Truth in Lending Act in 1968.

As set forth in the language of the Act, "The Congress finds that economic stabilization would be enhanced and the competition among the various financial institutions and other firms engaged in the extension of consumer credit would be strengthened by the informed use of credit" (Truth in Lending Act, 1968).

Required Disclosures

Under the provisions of TiL, lenders are required to disclose to the borrower certain information regarding the proposed or pending loan. Chief among these is the requirement that lenders disclose the cost of the loan, expressed as an annual percentage rate (APR). It was felt that this statistic would immediately benefit consumers by 1) providing a simple method of comparing competing loan offers, 2) permitting consumers to immediately identify particularly good or bad proposals and 3) allowing borrowers a means of comparing the relative merits of using existing liquid assets versus additional borrowing (Egan, Freeman & Simon, 1971). In addition, lenders were required to disclose an itemized total of the amount financed, the cost of the loan expressed in dollar terms and the number, amount and due dates of the payments required under the terms of the contract (Morganstern, 1972).

In the ideal, the disclosures required by Truth in Lending allow borrowers to make more informed decisions regarding their use of credit. Research, however, suggests that the hoped for increase in comparison shopping for credit has not materialized. Peterson and Black (1981) found that almost 80% of over 3500 respondents surveyed engaged in no search for favorable credit terms prior to borrowing. A more recent study found that consumers tend not to be interest rate sensitive, and tend not to discriminate between lenders based on interest rates (Calem & Mester, 1993).

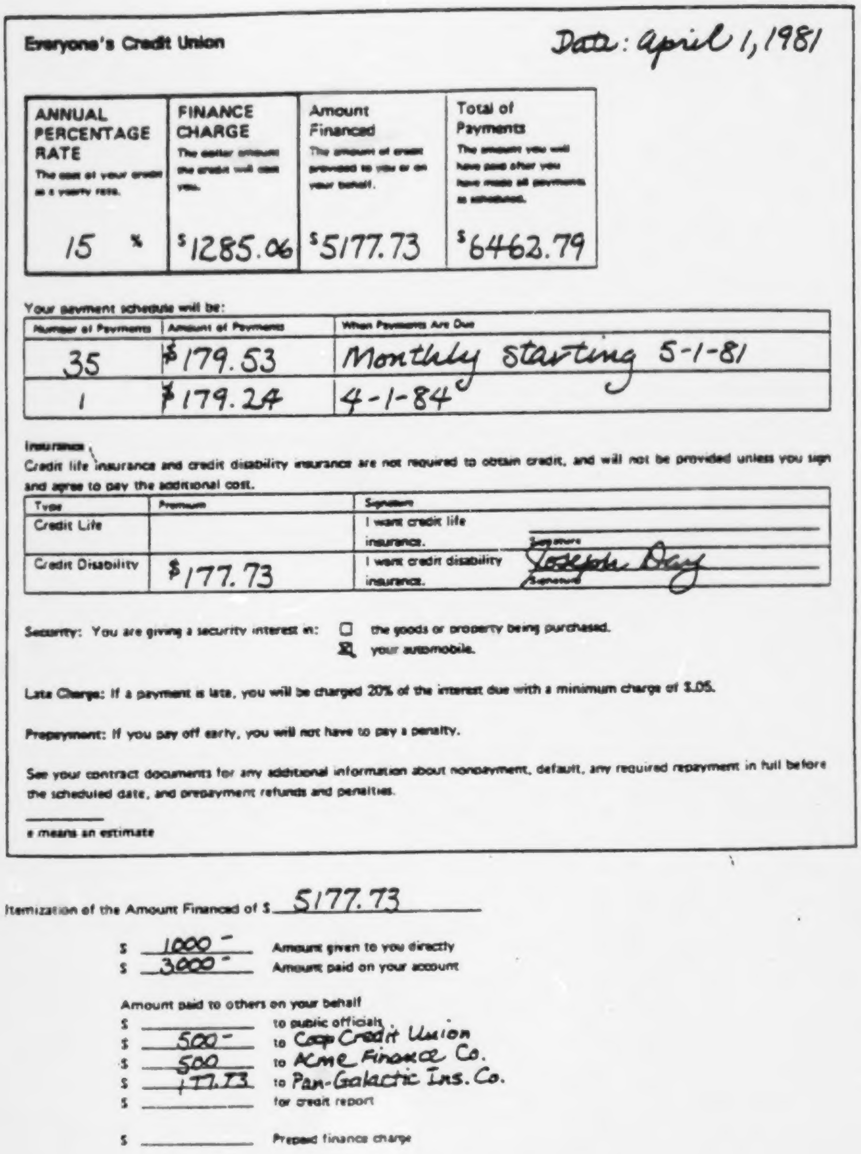
This continued widespread absence of search behavior creates an environment in which consumers are vulnerable to exploitation. Decades ago, Yntema (1938) cautioned that ignorance of credit terms left borrowers vulnerable to "advertising and the persuasive talk" of lenders. Worden and Sullivan (1987) similarly contend that "the existence of less informed buyers allows some sellers to charge higher prices". The economic losses resulting from this inefficiency are borne to a disproportionate degree by those who can least afford them -- the poor, the elderly and the under educated (Kinsey & McAlister, 1981; Worden & Sullivan, 1987).

In the lending process, the potential for exploiting the consumer is at its peak during the actual signing of the loan contract, a process known in the trade as "closing the loan". By subtly manipulating the terms of the interaction, it is possible for lenders to conduct the closing in a manner that ensures compliance with Truth in Lending while clearly subjugating TiL's intent. The purpose of this paper is to more clearly illuminate some of these techniques and provide consumers and consumer educators with a means of combating them.

Techniques to Defeat the Intent of Truth in Lending[2]

Figure 1 is a reproduction of the sample Truth in Lending disclosure form presented in the Act itself. Included is an itemization of the amount financed (bottom of the form), the cost of the loan expressed in dollar terms and as an annual percentage rate (top) and the amounts and due dates of the loan (center). Thus,

Figure 1.
Sample Truth-in-Lending Disclosure Form. From: Board of Governors of the Federal Reserve System (1989). Truth in Lending. Washington, DC: Author.



Everyone's Credit Union

Date: April 1, 1981

ANNUAL PERCENTAGE RATE The cost of your credit as a yearly rate.	**FINANCE CHARGE** The dollar amount the credit will cost you.	**Amount Financed** The amount of credit provided to you or on your behalf.	**Total of Payments** The amount you will have paid after you have made all payments as scheduled.
15 %	$ 1285.06	$ 5177.73	$ 6462.79

Your payment schedule will be:

Number of Payments	Amount of Payments	When Payments Are Due
35	$179.53	Monthly starting 5-1-81
1	$179.24	4-1-84

Insurance
Credit life insurance and credit disability insurance are not required to obtain credit, and will not be provided unless you sign and agree to pay the additional cost.

Type	Premium	Signature
Credit Life		I want credit life insurance. Signature
Credit Disability	$177.73	I want credit disability insurance. Joseph Day Signature

Security: You are giving a security interest in: ☐ the goods or property being purchased.
☒ your automobile.

Late Charge: If a payment is late, you will be charged 20% of the interest due with a minimum charge of $.05.

Prepayment: If you pay off early, you will not have to pay a penalty.

See your contract documents for any additional information about nonpayment, default, any required repayment in full before the scheduled date, and prepayment refunds and penalties.

e means an estimate

Itemization of the Amount Financed of $ 5177.73

$ 1000 –	Amount given to you directly
$ 3000 –	Amount paid on your account

Amount paid to others on your behalf

$	to public officials
$ 500 –	to Coop Credit Union
$ 500	to Acme Finance Co.
$ 177.73	to Pan-Galactic Ins. Co.
$	for credit report
$	Prepaid finance charge

such a form satisfies the disclosure requirements of the Truth in Lending Act. However, by appropriate management of the loan closing process, the effects can often be somewhat different than Congress envisioned in 1968 when TiL was written into law.

The Technique of Directed Attention

Communication theorists have long contended that power is an important component of human interaction (Millar & Rogers, 1976). Bochner, Cissna and Garko (1991) state that interpersonal communication can be viewed as "...a problem of control [emphasis in the original] in which self seeks to control the outcomes of other (p. 21)." They go on to say that "...interpersonal communication is described as a rational, goal-oriented activity in which the probability of success or effectiveness is determined largely by whether self has enough social knowledge and/or social skill to predict and control [emphasis in the original] other's responses (p. 21)."

Consider the power differential inherent in the typical consumer credit transaction. The loan officer (and by extension, the lending institution) has a tremendous advantage over the credit applicant. First, loan officers by virtue of their job duties are invested with a certain amount of "expert power" (French & Raven, 1956). Applications must be investigated and evaluated prior to any approval decision. Credit bureau reports must be reviewed, employment and residence data must be evaluated, and an assessment must be made of the applicant's ability to make payments on the pending loan in addition to existing credit obligations and current spending.

All of these activities require a certain amount of specialized knowledge, skill and training, and the loan officer's very employment is evidence to the customer that such expertise exists. Second, the loan officer is imbued with a certain degree of "reward power" (French & Raven, 1956). In the customer's eyes, the loan officer ultimately controls access to the desired reward, specifically, the proceeds of the loan. Central to the concept of reward power is the understanding that a person wielding such power can either bestow or withhold rewards depending on another's behavior. Third, the loan officer wields a certain amount of "coercive power" (French & Raven, 1956). Central here is the understanding that not only does the loan officer have the ability to bestow desired rewards upon the customer following a positive evaluation of the applicant, but also has the ability to coerce and change another's behavior by potentially withholding the desired reward following undesirable behavior. Thus, it is clearly in the customer's best interests to ensure that the loan officer sees only the customer's most positive attributes.

Now imagine that there are aspects of this contract that the customer might not deem desirable and that as a result the lender might wish to de-emphasize (e.g., a high interest rate). Truth in Lending requires that the institution inform the customer of the interest rate to be paid, but does not specify the manner of this disclosure. By using a pencil as a pointer, the loan officer can easily direct the attention of the customer to specific areas of the contract as they are discussed. More important, though, is that the power differential in this situation often causes customers to become more concerned with keeping their attention current with the pointer than with fully considering the details of the loan contract being presented. As a result, many of the "disclosures" required under Truth in Lending are considered by the consumer only briefly and partially, and are more often misunderstood than when they are considered more fully (Kinsey & McAlister, 1981).

The Pace of the Disclosure

This technique is typically employed simultaneously with the Technique of Directed Attention. Together, they form a powerful one-two punch. Consider that the loan officer is already using a pointer, and the customer is dutifully following along through the contract. The loan officer now simply increases the pace of the disclosure. The result is that even though the required disclosures are being made, the customer is often more determined than ever to keep pace with the pointer, and absorbs still less of the information presented. The effect is to create a sense of "information overload", where so many details are presented in such a short time that virtually nothing is retained by the customer. To use a boxing analogy, the rapid pace is designed to keep customers "back on their heels", a posture from which it is very difficult to mount an effective counterattack.

Did I Not Mention That?

Truth in Lending requires that certain disclosures be made at the time credit is granted, yet as has been noted, there is no specific requirement regarding the manner of these disclosures. Thus, pointing to a box and saying "This will be your interest rate" before moving on to the next topic is the legal equivalent of saying "Your interest rate will be thirty-six percent per year". Clearly, more information is contained in the second statement, yet the former will often be used because it is less likely to attract the consumer's attention to the omitted information. Less attention is a desirable outcome as it means less potentially sticky questions, less objections and less loan business lost to another lender.

Mandatory Optional Insurance Coverage

Many lenders offer credit insurance for sale with their loans. Usually, such policies fall into one of two categories. Credit life insurance policies state that if the borrower dies with any portion of the loan outstanding, the insurance company is obligated to repay the balance. Credit disability insurance requires the insurance company to make the regularly scheduled loan payments in the event that the borrower becomes disabled during the time the loan is outstanding. Many lenders include the insurance premiums with the requested loan amount so that the customer is not forced to pay the premiums out-of-pocket. In effect, the lender loans the premiums to the customer in addition to the amount originally requested, and charges interest on the now larger total amount borrowed.

It is important to understand that loan officers and branch managers are evaluated, among other things, on a statistic known as "insurance penetration". This is the percentage of new loans written for which borrowers accept credit life and disability insurance coverage. Furthermore, sale of these policies generates commission dollars for the loan officer and typically for the branch manager as well. Thus, an incentive clearly exists for both to maintain a high insurance penetration ratio.

One of the ways to accomplish this is to write the coverage into the amount financed as a matter of policy for every new loan. Premiums are then deleted from the amount financed only for those customers who specifically decline the coverage. By forcing customers to decline unwanted coverage rather than depending on customers to request desired coverage, insurance penetration numbers are maintained at higher levels than would otherwise be the case.

When presenting the itemization of the amount financed, the loan officer simply acknowledges presence of the premiums, provides a brief description of the coverage, and directs the customer's attention to the next part of the loan contract. The loan officer never actually states that the coverage are mandatory, yet the fact that these coverage are completely optional is also not volunteered. This fact will be acknowledged only if the customer specifically asks whether the coverage are mandatory. Such questions occur infrequently as they require the customer to seize control of the interaction and re-direct attention to a previously discussed portion of the contract. Such actions clearly work against the power differential present during the loan closing.

If the borrower ultimately does decide to decline the coverage, the lender is legally obligated to remove the premiums. Doing so, however, creates an entirely new set of problems for the borrower relating to the issue of time.

The Money Value of Time

The idea that the value of money varies as a function of time is an idea basic to the study of finance. It is equally true, however, that time has a money value. At the minimum, an opportunity cost perspective suggests that time has a value equal to the market earnings foregone while engaged in some other behavior (Becker, 1965; Bryant, 1990; Zick & Bryant, 1983).

Consider that the typical lending institution is open only during "normal" business hours. Thus, once the application has been approved, the customer is faced with a dilemma: how to sign the loan contract and pick up a check for the proceeds given that "normal" business hours often overlap with "normal" working hours. Typically, the customer must either a) take time off from work or b) come to the institution over the lunch hour to conclude the loan process. Either solution implies that the customer must operate within a time constraint. In both cases, minimizing the opportunity cost of time involves minimizing the time spent away from work and the loan becomes more costly to the borrower the longer it takes to close. This is true both in terms of earnings foregone and, perhaps more importantly, in terms of the negative effect of time away from the job. Poor employee performance reviews due to excessive absenteeism can be the cause of fewer and lower raises, lost promotions and in extreme cases, termination of employment. Therefore, it is clearly advantageous for the borrower to minimize the amount of time spent away from work.

Consider the case of the borrower coming to the lender's office over the lunch hour. Typically the loan will be sold, in part, on the basis of convenience. The customer is told that the papers will be ready to sign immediately upon arrival at the office. The contract will be entered into the computer ahead of time and the check for the proceeds will be ready for the customer to pick up. It is stressed to the customer that the advance preparation is to minimize the amount of time spent in the office, an idea usually attractive to the borrower.

Now consider a brief itemization of the lunch hour. Assume it takes the borrower five minutes to get from desk to car and leave the parking lot. Consider also that a mere three mile drive to the lender's office through urban lunch hour traffic can take as long as ten minutes. These two activities alone have consumed fifteen minutes of the lunch hour. Given that the trip back to work will take about the same amount of time, thirty of the sixty minutes available have already been spent. Finally, the borrower will likely want to actually eat something over the lunch hour. Even utilizing drive through service, getting out of traffic, picking up the food and getting back on the road likely consumes another 5-10 minutes. By this time, forty of the sixty minutes of the lunch hour have been consumed, and the borrower has yet to even enter the lender's office.

On arriving at the lender's office, the customer sees that the contract sits on the loan officer's desk as promised, along with the computer-generated check. The closing goes as planned until the itemization of the amount financed. The customer asks whether the credit insurance coverage included in the amount financed are mandatory, and is told that the coverage are, in fact, optional. Now assume that the customer wishes to decline the insurance package. The loan officer is willing to comply with the request. But the first loan has already been entered on the computer, and now, the customer is told, the old loan and check must be voided. Only then can a new loan be entered into the computer and a new check printed and signed. Then, the new contract must be reviewed with the customer, in accordance with TiL. All of this will take time (thus delaying return to work), and the borrower knows it. Many will refuse the offer of a new contract and accept the original, though it contains insurance coverage neither desired nor requested.

For the lender, insurance penetration numbers increase, commission dollars are generated, and profits increase as interest is charged on the premiums in addition to the amount originally requested. The consumer, however, faces higher payments and has borrowed (and must repay) more than originally planned. Clearly, the end result between the two parties is not equal.

You Can't Always Get What You Want[3]

This technique also depends for its success on the money value of time. Once the credit investigation has been completed, most lenders have a fairly definite sense of how much new credit, if any, can be advanced to a particular applicant. Often, the lender can immediately approve the application for the amount requested. There is a dilemma, however, when the borrower does not qualify for the amount requested, yet can be approved for a somewhat smaller sum. Clearly, it is in the lender's interest to make a smaller loan and collect some interest income instead of rejecting the application outright and collecting none. The difficulty is in getting the applicant to accept a smaller (and presumably insufficient for their purposes) loan than originally requested.

The lender's goal in this situation is to make it as inconvenient as possible for the borrower to reject the smaller loan offer. Since rejecting an unsatisfactory loan offer from one's living room can be done with relative ease, the borrower will be told that the application has been approved (which isn't untrue). The customer then travels across town to the lender's office incurring the same "costs" as before (time is spent, traffic is battled, etc.) and importantly, operating under the incorrect assumption that the amount requested will be delivered. This misconception will not be clarified until the loan contract is reviewed with the customer. Only at that time does the loan officer reveal that the customer does not qualify for the amount originally requested, yet qualifies for some smaller amount. The contract will have been prepared for this smaller dollar figure, and the check will have been placed directly on top of the contract, in full view of the borrower.

Understanding the role of the borrower's expectations in this transaction is crucial. First, the customer expects to leave the lender's office with a check. Second, the borrower has invested some degree of time and effort into coming to the office, and expects some form of return on that investment to balance the scales, specifically in the form of the loan proceeds. Many borrowers will accept the smaller loan rather than leave the lender's office empty-handed. Those customers depart with a legal obligation to repay a loan which is insufficient to meet their needs and which may therefore result in additional borrowing.

Recommendations

Addressing these problems via additional disclosure laws is not likely to have a meaningful impact in reducing borrower exploitation. First, much of the potential that exists for such exploitation to occur comes not from a lack of available information, but rather from aggregate borrower behavior. The information necessary to defeat any of the techniques discussed in this paper is readily available to the borrower under the provisions of existing federal legislation. Unfortunately, to a large extent, consumers do not utilize this information by actively shopping for credit. Second, even if new and tougher disclosure legislation were entered into law, enterprising lenders would ultimately be able to devise new and different ways to skirt the legalities of such legislation. Those who are motivated to exploit legislative loopholes in search of profit will likely continue to do so, regardless of the breadth of any legislation before them. It is not likely that any legislative package will ever be drafted that is so far reaching and all inclusive that no possibility for exploitation of this sort exists.

Rather, it would seem that changing consumer behavior in this area would be a more productive avenue of approach. In order to achieve this goal, consumer education programs should be designed that focus on the following:

1. Borrowers should be encouraged to read the contract at their own pace. Consumers should be cautioned not to allow their attention to be led elsewhere in the interest of behaving in a socially acceptable fashion.

2. Borrowers should be made wary of amounts financed that differ from the amount requested. Borrowers should therefore closely examine the merits of any unrequested loan features before proceeding.

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3. Borrowers should be advised to allow sufficient time for reviewing and finalizing the loan. Borrowers should be cautioned to never allow time pressures to enter into the decision making process.

4. Borrowers should be advised to confirm the exact terms of the offer (e.g., number of payments, interest rate, amount financed) prior to traveling to the lender's office. The terms should at least be similar to those desired by the consumer. If they differ markedly, borrowers should be urged to determine the reason. Then a carefully reasoned decision can be made whether to invest the time and energy involved in traveling to the lending institution to close the loan.

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Endnotes

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2. I do not propose that all lenders engage in or endorse the practices described above. However, I know from three years' personal experience in the consumer credit industry that at least some do. Regardless of whether a loan officer is engaging in these practices as a matter of institutional policy or to pursue a personal agenda, the end result for the consumer is the same: credit becomes much more expensive to obtain. This may cause new financial problems to develop and existing difficulties to worsen. It is therefore crucial that consumers be made aware of the concealed pitfalls that exist in the loan closing process and the means to avoid them.
3. Jagger, M. & Richards, K. (1969). You Can't Always Get What You Want. On Let It Bleed [CD]. Los Angeles, CA: Abkco Records.

Banking Laws and the Consumer

This study attempts to determine consumer awareness of the regulatory environment surrounding banks. Using a sample of a little under a thousand responses of bank customers around the nation, we find, among other things, that consumers are aware of the existence of banking laws and recognize that these laws provide the highest benefit to them, while simultaneously providing the least benefit to banks. Our results have important policy considerations.

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Introduction

Twenty-five years have passed since the first federal consumer protection statutes affecting banking was enacted. The Fair Housing Act in 1968 followed by the Truth in Lending Act in 1969 were the first in what became a steady flow of laws and regulations intended for the protection of "common" folks from lending agencies and to confer other public benefits. At present there are more than a dozen federal laws and an even greater number of regulations constituting a massive body of complex rules that must be executed by banks in the course of doing business.

Over the last few years, however, the financial institutions have become increasingly unhappy over what they consider an overly high cost of executing government sanctioned regulations, and in the light of their concern, the mood of Congress, the media and the regulatory agencies has been to entertain the notion that costs of the regulatory requirements in general may outweigh the benefits derived from them. This has taken on new urgency, especially in the light of the fact that American banks have been steadily losing ground to their counterparts in the world stage. For example, in the Thomson Bank Directory's list of the top 100 banks of 1994, there are no U.S. banks in the top 30. The first U.S. bank to crack the list is Citibank at number 31.

In this backdrop, this study attempts to determine consumers' awareness of the regulatory environment surrounding banks and to determine consumer attitudes towards laws supposedly meant for their own protection and betterment. The following section discusses the focus group interviews that went into the creation of a mail questionnaire. Section 3 discusses the results relevant to the question posed in this paper. Section 4 concludes with some policy recommendations for bank lobbyists.

Focus Groups and Questionnaire

In order to establish consumer awareness of the legal environment surrounding banks, and their attitudes toward the laws, we designed a study using a technique widely used in consumer opinion research - focus groups. Focus groups involve conversational interaction among randomly selected small groups of consumers, guided by a script designed to probe the research question. The exercise is repeated with several different groups and the focus aspect is the common themes that emerge from repeated interactions. Specifically, we held focus group sessions in Indianapolis, Indiana; Tampa Bay, Florida; Kansas City, Kansas; and Madison, Wisconsin. The details about this part of the project, including a list of the participants, are provided in Chakravarty, Feinberg and Widdows (1995).

To probe awareness in focus groups, several versions of a "pop quiz" on factual aspects of laws were developed. The more detailed were these questions, the poorer was the score. The final version used in the questionnaire was a description of the ten most common consumer protection laws in banking and asked who the main beneficiary of those laws was and if their own state of residence had enacted a law like that described. In reality all states have enacted these laws. For attitudes to the laws, a 5-point ratings scheme was developed. The conclusions from the focus group exercise were then validated by mail survey to a nationally representative sample of 5000 bank customers. A little under one thousand returned surveys could be used for the analysis.

Table 1

Percentage responses from the mail survey broken down by states. Percentages created from an overall sample size of 933 respondents.

State	**Percentage Responded**	**State**	**Percentage Responded**	**State**	**Percentage Responded**
Alabama	0.6	Louisiana	1.6	New York	6.6
Alaska	0.2	Massachusetts	3.7	Ohio	6.0
Arkansas	0.2	Maryland	1.7	Oklahoma	0.6
Arizona	0.8	Maine	0.7	Oregon	1.4
California	7.7	Michigan	3.4	Pennsylvania	4.1
Colorado	2.8	Minnesota	4.5	Rhode Island	0.7
Connecticut	0.9	Missouri	3.7	South Carolina	1.4
Delaware	0.4	Mississippi	0.2	South Dakota	0.2
Georgia	1.5	Montana	0.2	Tennessee	1.3
Hawaii	0.1	North Carolina	3.0	Texas	10.3
Iowa	0.8	North Dakota	0.6	Utah	0.9
Idaho	0.5	Nebraska	1.6	Virginia	0.7
Illinois	3.9	New Hampshire	0.9	Vermont	0.1
Indiana	0.8	New Jersey	1.9	Washington	1.4
Kansas	0.5	New Mexico	0.3	Wisconsin	3.1
Kentucky	1.5	Nevada	0.3	West Virginia	1.3

Table 2

Demographic distribution of respondents. Based on an overall sample size of 933 respondents.

A. Highest level of education.

High School (1)	College (2)	Post-College (3)	Mean	Standard Deviation
291	450	264	1.97	0.74

B. Gender

Female (1)	Male (2)	Mean	Standard Deviation
421	584	1.58	0.49

C. Age-group

under 25 (1)	26-35 (2)	36-50 (3)	51-65 (4)	66-75 (5)	over 75 (6)	Mean	Std.Dev
10	135	436	317	103	4	3.38	0.89

D. Total annual family income (before taxes).

Under $20,000 (1)	$20,000-$34,999 (2)	$35,000-$49,999 (3)	$50,000-$74,999 (4)	over $75,000 (5)	Mean	Std Dev
55	171	331	249	199	3.36	1.14

Results

Table 1 reports the percentage distribution of the respondents to the mail survey broken down by the states of the union. Among other things, there is a generally nice distribution of responses across the United States with 48 out of 50 states represented in the sample. Next we present some demographic characteristics of the sample based on gender, education, age-group and total annual family income (Table 2). From table 2, the demographic characteristic of the average respondent can be summarized as having at least a college degree, equally likely to be a male or female, between 36-50 years old and earning between $35,000 and $50,000 annually. It is likely that the sample reflects a selection bias in the sub-sample of the overall sample surveyed that returned the survey. One way to detect this bias would be to compare demographic characteristics of the survey sample with that of the response sample. But this is not possible.

Table 3 shows the respondents' perceived importance of several laws pertaining to banks and banking. Importance was rated on a 5-point scale, with 5 indicating that the law was perceived to have high benefits to the respective constituency (banks, consumers, government or business), and 1 indicating low benefits. The numbers in Table 3 are averages for those who filled out an answer to the question. In addition, Table 1 shows the numbers of people who thought such a law existed, did not exist, or were unsure.

The most striking feature of Table 3 is that in all cases, respondents saw the laws as providing highest benefit to consumers. The average scores were, with one exception, greater than 4.00, and therefore in the highest category of perceived importance. Two in particular were perceived to be extremely important to consumers, namely "a law requiring banks to carry deposit insurance", and "a law which requires banks to reveal important information about interest rates before customers sign up for credit cards". The exception referred to above, the only law not rated in the highest interval of importance to consumers, "a law which makes banks have special loan programs for low and moderate income neighborhoods".

Respondents rated the perceived importance of the laws to the banks lower than that to all other constituents. In six of the cases, the average score was below 3.00, the midpoint of the importance scale. The two laws rated most important to banks were the requirement to carry deposit insurance, and "a law which prohibits discrimination in mortgage loans".

The laws were rated generally in the range of 3.00 to 4.00 in terms of importance to government and business. Respondents thus recognize the usefulness of the laws to these two constituencies. As they did for banks and consumers, respondents rated the requirement for deposit insurance in the highest category of importance for government and business. Other than that, the only rating over 4.00 was for truth in savings to business.

The focus group portion of the study had lead us to believe that most respondents would be unaware or uncertain of the existence of the laws. The results did not confirm this expectation. The majority of respondents correctly identified the existence of the laws, while incorrect assessments constituted less than ten percent of the sample. The number unsure about the existence of the laws did vary from one question to the next however, which has interesting implications for banks.

First of all, the law rated most important to consumers (and indeed to the other constituents) was one requiring deposit insurance. The same law had the second highest number of respondents that were unsure of its existence and the second lowest number of respondents aware of its existence. In this lies a marketing opportunity for banks in advertising the current credit insurance coverage offered to consumers. The same phenomenon applies to the laws rated second and third in importance to consumers, namely truth in lending and limitations on credit card liability. There was a relatively high degree of uncertainty among consumers as to the existence of such laws. Banks therefore stand to gain in consumers' eyes by promoting the existence of these protections.

The second implication for banks lies in the respondents' being very aware of the existence of "a law toward special loan programs for low and moderate income neighborhoods", yet giving this law the lowest rating in terms of importance to consumers. Such a finding may be of importance to banks' lobby effort over this law.

A third finding with interesting implications is that respondents were very aware of two laws, and rated them of high importance to consumers. These laws, namely truth in savings and credit card billing requirements, could therefore be regarded as "sacred cows" and left alone by banks lobbyists. There is little marketing opportunity to be made by claiming credit for the laws, while opposing such laws may upset consumers.

On the other hand, anti-discrimination laws receive fairly high importance ratings to consumers, but awareness of the existence of the laws is not high. This points to a marketing opportunity for banks interested in reaching this segment of the market.

Table 3

Mail Survey Respondents' average rating of the importance of certain laws to banks, consumers, government and business, and the numbers who thought such a law existed in their own state.

Importance scale = 1 to 5; 5 = highest benefit. Sample size = 933.

	Average Importance rating to:				Law in State?		
Law	**Banks**	**Consumers**	**Government**	**Business**	**Yes**	**No**	**Unsure**
1. Truth in Savings	2.96	4.56	3.31	4.01	653	118	162
2. Collection Practices	2.32	4.33	2.69	3.01	536	113	280
3. Special Loans	2.65	3.80	3.23	3.14	681	104	134
4. Discrimination	3.57	4.44	3.95	3.88	316	26	579
5. Card Liability	2.59	4.61	2.96	3.04	491	61	373
6. Card Discrimination	3.28	4.34	3.41	3.77	478	49	377
7. Truth in Lending	2.99	4.77	3.36	3.75	494	34	388
8. Loan Practices	2.82	4.10	3.98	3.61	590	27	261
9. Billing	3.18	4.55	3. 25	3.68	701	63	149
10. Insurance	4.10	4.82	4.11	4.37	392	12	514

Finally, a general implication of the overall high importance ratings for non-bank constituencies (consumers, government, business) would indicate that caution is necessary when lobbying against laws relating to banking. There is little scope for gaining the public's sympathy on these results, and every prospect of upsetting the public, especially where the aforementioned sacred cows are concerned. Discretion in lobbying, with varying policies depending on the law under consideration seems to be the order of the day.

Conclusion

The purpose of this study is to determine consumer awareness of the regulatory environment surrounding banks and to determine consumer attitudes towards laws supposedly meant for their own (consumer) protection and betterment. Using a sample of a little under a thousand returned questionnaires of bank customers around the nation, we find that the average bank customer with at least a college education, 36-50 years old and making $36,000-$50,000

- seems aware of the existence of the banking laws and recognizes these laws as providing the highest benefit to them (the consumers).
- recognizes that these same laws are least useful to banks.
- views two laws, in particular the truth in savings act and the credit card billing requirements as very important
- gives anti-discrimination laws high-importance ratings but his awareness of the existence of such laws is not high.

Overall our results suggest that little is to be gained by lobbying for the abolition of banking laws especially with regard to the ones related to credit card liability and truth in savings. On the other hand, the banking image could receive a shot in the arm by promoting anti-discrimination, especially in the minority segment of the population.

Acknowledgments

This research was made possible by a grant from the Prochnow Educational Foundation, Madison, WI. We would like to thank James Scott for research assistance.

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Consumer Interests Annual *Volume 42, 1996*

The Future of Banking: The Strategies That Won the Game Yesterday Will Win The Game Tomorrow - -
Results from a National Survey of Banking Consumers

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At first thought you might think that the essence of banking is money. Yet in light of today's competitive market environment in which the guiding paradigm is that businesses should be consumer driven it is clear that banking is a people business and, by the way, they deal with money. Banking has always been a people business. The successful banks have always been those that reached out and extended themselves to the consumer.

It is not clear that banks are leading the charge to consumer driven paradigms. An exception might be Bank One who tells us that they will do "Whatever It Takes" to get and keep our business. Banks have even made it harder for customers to feel close by encouraging use of impersonal ATM machines and even charging customers who use real person tellers. The result--low satisfaction with banking and low loyalty to particular banks.

Consumer relationships are the competitive battlefield in the 1990's. The only real asset with long term value is a loyal consumer. Only satisfied consumers return. Today's winning companies are realizing that consumer satisfaction must drive their strategic decision making. If a business wants to be around in 25 years they must listen to their consumers, serve them better than the competition, and change to meet the changing needs and expectations of the consumer. If they don't someone else will. Banking is no exception. In today's competitive market environment where there is a bank branch on every corner, credit unions, savings and loans, telephone banking, and computer banking, the consumer has a choice. If banks don't serve consumers well the consumer will seek out alternatives. The future of banking is the consumer and the technology that will serve them.

It is therefore prudent to look at the factors determining consumer satisfaction with banks and try to tease out what the future of banking will be as banks become more aware of and sensitive to the importance of consumer satisfaction. The data for looking at the nature and scope of consumer satisfaction with banking was drawn from a survey we conducted with a nationally representative sample of 1000 bank consumers. The items on the survey were determined after a series of focus groups. (A complete survey is available from the authors as in published papers outlining some of the major findings -- Chakravarty, Feinberg, & Widdows, 1995; Chakravarty, Widdows, & Feinberg 1996).

Results

We characterized the possible relationships between consumers and banks as varying in the degree of satisfaction (high versus low present satisfaction) and importance (high or low importance to the consumer).

Satisfied and Important

Consumers were satisfied in the following important areas: trust, keeping promises, dependability, helpfulness, latest technology, location, and politeness of employees. Most of these issues deal with relationship issues. The evidence is that banks are satisfying customers in these areas.

Satisfied and Not Important To The Consumer

Consumers were currently satisfied with bank hours, availability and use of ATM machines, physical appearance of the banks and its employees, and phone contact.

Not Satisfied But Also Not Important

Consumers were not satisfied with the level of special/personalized service they received, lines, the ability to bank on the personal computer, availability of quiet areas to work, 1-800 numbers for access, newsletters, greeters, or help tapes and material. While these areas define dissatisfaction they do not also define areas that consumers consider important. From a strategic point of view banks should worry about these only after dissatisfaction on important issues are managed well.

Not Satisfied and Important

From a strategic point of view the highest payoff in customer satisfaction can occur in elevating areas of importance where consumers are dissatisfied. The areas of high dissatisfaction in highly important areas were banks having hidden costs, not having the customers best interest at heart, no personalized attention, and no written materials to explain things.

Computer Use

Work at the Purdue University Retail Institute has identified computers and technology as means by which companies can serve two emerging consumer trends--consumer desire for control and consumer desire for individualized products/services. Consumers increasingly want control of the retail transaction (Schwab One Source allows consumers full access to research and trading without having to talk to a single person). In addition, consumers are increasingly demanding that goods and services be personalized to them. Technology allows the development of personalized mass merchandise. (Levi's can personalize a pair of jeans in their stores, supermarkets can track individual purchase and follow up with coupon from manufacturers to reinforce the purchase or induce purchase of competing product).

In this survey consumers were clear in stating that they would welcome the ability to do all their banking over the computer (60% agreement) and that they would switch banks if a competing bank allowed such activity (70%).

Strategic Implications For the Consumer Interest

The consumer interest is in creating institutions and business that serve them well. Consumer satisfaction is one measure by which we can assess how well consumer interests are being served. The findings from this survey showed a level of dissatisfaction with banks on decidedly relationship issues. The good news was that on many relationship issues consumers were very satisfied. Thus, successful banking is, as originally thought, a relationship/people issue. Moreover technology will allow banks to serve customers well by creating access to personalized relationships under the consumer control. The data show that consumers want it. Far from alienating consumers, our work at the Purdue Retail Institute on banking and other industries indicates that technology can allow banks and businesses to become closer to the consumer in the consumers interest. And, this will work because not only is closeness in the consumers interest but it is also in the banks best self-interest (loyalty and profitability).

There is evidence that this is exactly what is happening. In a recent *New York Times* piece it was pointed out that since Citibank started computer banking 11% of its customer base has signed on. Nearly 100,000 customers signed up with Quicken in the first month of offering banking. While this represents less that 1% of the 100 million households in the United States the article made clear that once technical problems are solved home/computer banking will be a dominant force (Hansell, 1996). On the other hand, it seems that banks do not get "it" and banking will be dominated by software companies (Elgin, 1996).

The consumer does not get up in the morning and say, "What can I do for XYZ Bank but what can XYZ Bank do for me." And, if XYZ Bank does not do it the consumer will go elsewhere. Technology will allow banks to do exactly what the consumer wants when they want it.

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Seafood Safety Perceptions and Their Effects on Consumption Choices

This paper identifies factors that may influence consumers seafood safety perceptions. It examines how safety perceptions would affect future seafood consumption under a variety of hypothetical conditions. A telephone survey of random Rhode Island consumers provided data for this analysis.

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The seafood supply in the U.S. is associated with a diverse but controllable set of health risks. Consumers most at risk are those who consume raw molluscan shellfish which have been exposed to environmental contamination and naturally occurring bacteria (e.g., *Vibrios*) (National Academy of Sciences (NAS) 1991, p. 9). The second largest constituency at risk is consumers of recreational and subsistence fishery products. This results from environmental contamination and natural toxins. Minimization of these risks is, in part, the responsibility of regulatory agencies that administer programs such as water quality monitoring. However, a significant amount of control over seafood-related health risks lies in the hands of the consumer. For example, consumers can simply refrain from eating raw shellfish. In addition, they can use cooking methods which eliminate the possibility of cross-contamination between raw and cooked product.

While studies show that the nation's seafood supply is generally quite safe and highly nutritious (GAO, 1988; FDA, 1989; CDC, 1990; NAS, 1991; Hurley and Liebman, 1994), several other studies suggest that many consumers continue to perceive the seafood supply as somewhat unsafe, e.g. Anderson and Morrissey (1991), Lin *et al.* (1991), Brooks (1992), AUS Consultants (1992), Lin *et al.* (1993), and Wessells and Anderson (1995). Recently, the U.S. Food and Drug Administration (FDA) proposed a new and comprehensive inspection system to ensure the quality and safety of the nation's seafood supply (Yin, 1994).

The purpose of this study is two-fold. First, an ordered probit model of consumers' safety ratings of the seafood supply is used to perform hypothesis tests. This was done to determine whether past personal experience with seafood, including frequency of consumption of seafood and risk-taking behavior such as consumption of raw seafood, influences the safety ratings. Second, chi-squared tests are performed to evaluate the impact hypothetical exogenous changes may have on seafood consumption of consumers with different levels of seafood safety perceptions. These hypothesis tests yield implications regarding the benefits of providing additional information to consumers to improve their seafood consumption decisions.

Survey Design and Qualitative Results

A random telephone survey of 156 Rhode Island households was conducted during the summer of 1990. The survey consisted of questions regarding seafood consumption by species and perceptions of seafood quality and safety. The respondents from all 156 households consume seafood in some form, either at home or at restaurants. The average number of times per month respondents consume finfish at home is 3.2 versus 1.8 times per month at restaurants. Similarly, the average consumption of shellfish at home is 2.8 times per month compared to 2.4 at restaurants. The most frequently consumed finfish among these Rhode Island residents is cod, followed by flounder, haddock, and swordfish. The most frequently consumed shellfish are clams, followed by scallops. Lobster and shrimp are also among the most popular seafood products.

One of the objectives of the survey was to determine to what extent consumers assume risk-taking behavior in their seafood consumption patterns. For that reason, respondents were asked if they consume shellfish or finfish raw. Forty-six percent reported that they consume shellfish raw, while 7.7% reported that they consume raw finfish. Additionally, respondents were asked if they consume various portions of fish and crustaceans, namely, the tomalley of lobster, and the skin, fatty portions, dark flesh, organs, or roe of finfish. These portions are scientifically proven to accumulate toxins, if any are present in the aquatic environment. Fifty-three percent of respondents report that they consume one or more of these portions of fish and lobsters.

In response to a question regarding the overall safety of the seafood supply, 21.2 percent stated that they believe seafood is safe, 48.0 percent believe seafood is somewhat safe, and 30.8 percent believe that seafood is somewhat unsafe. Of those who responded that seafood is safe, their frequency of finfish consumption per month is 5.4 and 1.4 times per month for bivalve shellfish.[3] For those who responded that the seafood supply is somewhat safe, the frequency of finfish consumption is 5.6 times per month and 1.8 times per month for bivalve shellfish. Of those respondents who stated that seafood is somewhat unsafe, the mean shellfish consumption was higher (1.9/month) than the sample average, while finfish consumption was lower (3.9/month). The differences in mean finfish consumption across respondent categories are significant at the 5% level. Of the respondents who stated that they believe seafood to be less than safe, 73.2% cited ocean pollution as a specific concern, followed by chemical toxins (23.6%), food poisoning (17.9%), and handling (20.6%). Many respondents (40.7%) also stated that they were specifically concerned about the safety of shellfish.[4]

Model of Seafood Safety Rating

There are several factors which can reasonably be expected to influence consumers' perceptions of seafood safety. In particular, frequency of consumption may be hypothesized to be correlated with safety ratings. Lin *et al.* (1991) hypothesize that oyster safety ratings are a function of frequency of consumption, and the empirical analysis confirms this. A frequent seafood consumer might *a priori* be expected to perceive seafood as safer than a consumer who does not consume seafood often. Similarly, Brooks (1992) finds that the relative risk rating of mussels to other food products is correlated with the frequency of mussel consumption. Wessells and Anderson (1995) find that frequency of consumption is positively correlated with willingness to pay for seafood safety assurances.

Risk-taking behaviors may also be related to safety perceptions. *A priori* it is expected that risk-taking behaviors, such as consuming raw shellfish or eating the organs where toxins accumulate, will be positively related to seafood safety ratings. In this study, a significant number of respondents reported that they had undertaken risks such as consuming raw shellfish or eating portions of finfish and crustaceans which elevate the long-term risk of becoming ill. It is possible that these respondents have limited, if any, information on the risks involved as a result of such behavior. However, given findings of Celsi *et al.* (1993), this behavior could also be explained by: a) respondents' confidence in their ability to choose a safe product; or b) respondents' extrapolation from previous seafood consumption experiences wherein they do not become ill, thus believing that they will not become ill from the continuation of such risk-taking behavior.

In this study, the data on seafood safety ratings have an inherent ordering. The ratings range from safe, somewhat safe, to somewhat unsafe. None of the respondents in this sample indicated that they felt the seafood supply is completely unsafe. Thus, if the dependent variable (safety rating) were recorded as a discrete variable, 0 = somewhat unsafe, 1 = somewhat safe, and 2 = safe, a multinomial logit or probit model would fail to take into account the ordinal nature of the responses. Therefore, an ordered probit model was estimated to explain consumer seafood safety ratings as a function of variables describing seafood experience and consumer characteristics. An ordered probit model is specified as:

$$y^* = \beta' x + \varepsilon \qquad (1)$$

where y^* is unobserved, x is a matrix of explanatory variables, β is a vector of parameters, and ε is a vector of error terms. What is observed is that:

$$y = 0 \text{ if } y^* \leq 0, \qquad (2)$$

$$y = 1 \text{ if } 0 \leq y^* \leq \mu_1 \qquad (3)$$

$$y = 2 \text{ if } \mu_1 \leq y^* \leq \mu_2 \qquad (4)$$

where $0 \leq \mu_1 \leq \mu_2$ If we assume that ε is normally distributed across observations and the mean and variance are normalized to zero and one, respectively, then the following probabilities are obtained:

$$\text{Prob}(y=0) = \Phi(-\beta' x) \qquad (5)$$

$$\text{Prob}(y=1) = \Phi(\mu_1 - \beta' x) - \Phi(-\beta' x) \qquad (6)$$

$$\text{Prob}(y=2) = 1 - \Phi(\mu_2 - \beta' x) \qquad (7)$$

where $\Phi(-\beta' x)$ is the cumulative normal density function evaluated at the vector of regression parameters and explanatory variables. The marginal effects of the regressors, x, on the dependent variable (probabilities) are not equal to the coefficients as in linear regression analysis. Instead, these marginal effects are equal to the partial derivative of equations (5) - (7) with respect to each regressor (Greene, 1993, p. 674).

Variable coefficient estimates of the ordered probit model are presented in Table 1. The associated

Table 1

Estimated Variable Coefficients of the Probit Model and Marginal Effects

			Marginal Effects		
Variable	Coefficient	t-ratio	Prob(y=0)	Prob(y=1)	Prob(y=2)
Constant	-0.220	-0.297	0.046	-0.011	-0.035
FINFISH	0.081*	1.900	-0.017	0.004	0.013
SHELLFISH	-0.198*	-1.909	0.041	-0.010	-0.031
AGE	0.014	1.361	-0.003	0.001	0.002
EDUCATION	-0.037	-0.271	0.008	-0.002	-0.006
RISK	0.676*	1.947	-0.137	0.036	0.101

Summary Statistics: Number of observations = 156
Value of the Log-likelihood Function = -156.77
Chi-Square statistic = 11.99** (with 5 degrees of freedom)

* indicates significant at 10% level
** indicates significant at 5% level

marginal effects, calculated at the means for the continuous variables, are also presented. The estimated equation is significant at the 5 percent level since the χ^2 statistic for the likelihood ratio test of the estimated regression against a regression of the dependent variable on only the intercept is 11.99, compared to a critical χ^2 value of 11.07 (α=0.05) with 5 degrees of freedom. The effects of the socioeconomic variables (education, income, age) on the probability of rating seafood as safe are statistically insignificant.

Initially, regressions were estimated which considered frequency of seafood consumption as a single variable. This was done to test the hypothesis that the more frequent the overall seafood consumption of the respondent's household, the more likely the respondent is to attribute a safe rating to the seafood supply. However, the coefficient on this variable was insignificant. Therefore, it was replaced by two variables which account for finfish and shellfish consumption separately.

In the final regression, both frequency of consumption variables are significant, while the signs are opposite. Analysis of the marginal effects shows that in this sample of respondents, there is an increasing probability of rating seafood as safe given an *increase* in the frequency of finfish consumption, and an increasing probability of a larger magnitude of rating seafood as safe given a *decrease* in the frequency of shellfish consumption. A likely reason for this result is related to the manner in which many survey respondents obtain the shellfish they consume. The survey question asking respondents to evaluate seafood safety referred to the available supply in general, not to the specific seafood they consume. However, 38% of respondents who rate seafood as somewhat unsafe, and 49% who rate seafood as somewhat safe, recreationally harvest shellfish for their consumption. Conversely, only 14% of those respondents who rate seafood as safe recreationally harvest shellfish. Additionally, the mean frequency of shellfish consumption among those who recreationally harvest shellfish is 2.7 times per month, compared to 1.5 times per month for those who do not. These differences in means are significant at the 5% level. Thus, while many respondents may be skeptical about the safety of the general seafood supply, they may have felt more confident about the shellfish they consume because they are personally responsible for its harvest. It is also possible that frequent consumers of bivalves may be more knowledgeable about the actual risks associated with shellfish. Thus, in general, greater experience with bivalves may be linked with increased consumer savvy regarding seafood. Those who eat relatively less shellfish yet rate it as safe may be inhibited from consumption by factors other than risk perception. Such factors may include high price, perceived difficulty in preparation or limited availability of high quality product.

Previously tested models also included two binary variables to evaluate the effects of risk-taking behavior. A binary variable was specified which was

Table 2

Respondents' Anticipated Change in Seafood Consumption Resulting from Hypothetical Events Given Their Safety Rating

	Respondents' Seafood Safety Rating (Percentage)			
Hypothetical Event	Somewhat Unsafe	Somewhat Safe	Safe	χ^2Statistic[a] (p-value)
Label with Catch Date (N=154)				
Consumption same	10.4	22.1	13.0	5.94*
Consumption increase	20.8	25.3	8.4	(0.051)
Seafood Inspection (N=154)				
Consumption same	11.7	29.2	15.0	9.18*
Consumption increase	18.8	18.8	6.5	(0.010)
Selecting and Preparing (N=153)				
Consumption same	13.7	24.2	15.7	6.41*
Consumption increase	16.3	24.2	5.9	(0.041)
Media Oil Spill Stories (N=155)				
Consumption same	5.8	17.4	9.7	6.71*
Consumption decrease	24.5	31.0	11.6	(0.035)
Closure of Bay to Fishing (N=152)				
Consumption same	6.6	18.4	11.2	8.11*
Consumption decrease	24.3	29.0	10.5	(0.017)
Seafood Price Drops (N=156)				
Consumption same	14.7	16.7	7.1	2.64
Consumption increase	15.0	31.4	14.1	(0.268)
New Local Vendor (N = 152)				
Consumption same	25.0	32.2	15.8	3.95
Consumption increase	5.3	16.4	5.3	(0.139)

* Significant at the 95% confidence level

[a] Degrees of freedom = 2

equal to 1 if the respondent consumes either shellfish or finfish raw, 0 otherwise, and an additional binary variable was specified as 1 if the respondent consumes portions of fish and crustaceans, such as the dark portions of flesh, the skin, fatty portions, roe, or organs, 0 otherwise. Results indicated that these two binary variables are highly correlated, and thus little significance was individually attributed to either. However, when a binary variable (RISK) is specified as 1 if the respondent engages in any of these risk-taking activities, 0 otherwise, then this variable is significant at the 6% level and positively related to safety perception. The coefficient for the variable RISK suggests that an individual who undertakes risk in their seafood consumption is more likely to believe the seafood supply is safe than one who does not.

Changes in Seafood Consumption with Exogenous Events

The survey also included questions concerning whether or not respondents' frequency of seafood consumption would change as a result of a variety of hypothetical exogenous events. These events include: 1) the advent of availability of seafood with labels containing catch date information; 2) the institution of a federally mandated inspection system for seafood; 3) an increase in respondents' knowledge concerning selection and preparation of seafood; 4) the appearance of media news stories of an oil spill in Narragansett Bay (located primarily in Rhode Island with some of its watershed in Massachusetts); 5) the closure of Narragansett Bay to all fishing; 6) a drop in the price of seafood by 25%; and, 7) the recent opening of a local seafood vendor. The first five events have safety implications while the latter two do not. A series of chi-square tests are performed on the frequencies to determine if the existence of these events individually would cause respondents with differing seafood safety ratings to alter their consumption frequencies. An analysis of the frequency of responses and the results of the chi-square tests are presented in Table 2[5].

In the three events which have positive implications for seafood safety (1, 2 and 3), those respondents who are less confident about seafood safety are more likely to increase their seafood consumption in response to positive information about seafood relative to the other respondents. For example, Table 2 shows that almost two-thirds of those who rank seafood as somewhat unsafe would increase their consumption if labels containing catch date were available, compared to only one-third of those who already believe seafood to be safe. Respondents who perceive that seafood is somewhat unsafe are also more likely to increase their consumption given mandatory federal inspection than are those who perceive seafood to be somewhat safe or safe. Similarly, over one-half of those who rate seafood as somewhat unsafe would increase their seafood consumption if they were to learn more about selecting and preparing it, compared to about one-quarter of those who rate seafood as safe. Overall, consumers with little confidence in seafood safety tend to be more responsive to positive information about seafood than consumers who are already confident about its safety.

For those events which have negative implications for seafood safety, (4 and 5), the respondents who rated seafood as somewhat safe or somewhat unsafe are more likely to decrease their consumption if there is an oil spill in Narragansett Bay or if the Bay is closed to fishing than those who believe that seafood is safe. Only one-fifth of those respondents who believe the seafood supply to be somewhat unsafe would maintain their current level of consumption given an oil spill in the Bay, as opposed to only one-half of those who think seafood is safe. Similarly, consumers who perceive seafood to be somewhat unsafe or somewhat safe would be more likely to decrease their seafood consumption as a result of a bay closure than would consumers who perceive seafood to be safe. Thus, it appears that consumers with less confidence in seafood safety are also more sensitive to negative press.

The final two hypothetical events presented to respondents, a price decline by 25% and increased convenience of acquiring seafood, are not safety related. In both cases, the chi-square tests showed insignificant differences in anticipated consumption responses between the three groups of respondents. These results suggest that consumers who are less confident in the seafood supply are less likely to change their consumption given the occurrence of these latter two events than in the situation where there are safety-related events. For those respondents who rate the seafood supply as somewhat unsafe, information related to the safety of the product will have a greater impact on anticipated seafood consumption changes than those events which are not related to seafood safety.

Conclusions

An ordered probit model of consumers' safety ratings of the nation's seafood supply was used to perform hypothesis tests to determine whether personal experience with seafood influences consumers' seafood safety ratings. Results indicate that frequency of consumption of finfish and shellfish, as well as risk-taking behavior such as consumption of raw seafood, do significantly affect consumers' safety ratings. Familiarity and experience with seafood diminish the likelihood that consumers believe the seafood supply is unsafe. Demographic characteristics such as age, income, and education of respondents were not significant explanatory factors for this sample of respondents. Thus, it is not possible to recommend specific demographic groups within Rhode Island to target in an industry marketing campaign or statewide education programs regarding the efforts to ensure the safety of the seafood supply. Further research which is able to elicit demographic characteristics of consumers would be useful in any targeted campaign. Such campaigns might convey the information found by objective analysis that the nation's seafood supply, with a few avoidable exceptions, is safe.

The chi-squared tests reveal that positive and negative information with implications for seafood safety are likely to impact consumption of those consumers who are least confident about the safety of the nation's seafood supply, while a drop in prices and increase in shopping convenience have less influence. In general, the results suggest that safety perceptions act as a barrier to consumption. Respondents who rated seafood as somewhat unsafe are far more likely to anticipate a change in their consumption given a positive or negative exogenous event than are respondents who are more confident in the seafood supply. Therefore, respondents who are least confident in seafood safety may be more willing to change their seafood consumption when provided with additional information. Positive information such as labeling, selection, and preparation techniques or inspection is likely to provide incentives to these consumers to increase their seafood consumption. Likewise, accurate information following negative events, such as fishing closures and oil spills, could counteract anticipated reductions in seafood consumption by bolstering consumer confidence.

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Endnotes

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3. Bivalve shellfish includes mussels, clams, and oysters--in other words, those shellfish which are typically consumed whole and sometimes raw.
4. Respondents were allowed to mention all their concerns; therefore, the percentages will not sum to 100.
5. The percentage of responses for each question sum to 100% of the respondents to that question.

A Model of Consumers' Risk Perceptions Toward Recombinant Bovine Growth Hormone (rbGH): The Impact of Risk Characteristics

This study examines the effect of risk characteristics, described as outrage factors by Hadden (1989), on consumers' risk perceptions toward recombinant bovine growth hormone (rbGH). Results suggest that all but one of these risky elements elicited consumer outrage perceptions.

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One of the first animal-specific applications to be approved for the marketplace, recombinant bovine growth hormone (rbGH), is considered a controversial test case shaping the public's acceptance of other biotechnology applications. Approval of rbGH was granted February, 1994 by the Food and Drug Administration (FDA) after scientific evidence suggested humans were not at risk consuming milk or meat from cows treated with rbGH (CAST, 1993).

Prior to FDA approval, numerous researchers explored the marketability of rbGH, reporting consumer apprehension (for synopses see Smith & Warland, 1992). Now that rbGH is available in the market, few researchers have followed up on consumer attitudes. In light of new information regarding risks (i.e., learning about FDA approval, commercial availability) consumers may be revising their perceptions of rbGH. Thus, the question remains whether consumer concern persists now that rbGH is FDA approved and available commercially.

Researchers focusing on understanding the causes of consumer concern have primarily concentrated on factors influencing consumers' risk perceptions. One factor stated to influence risk perceptions, or "...various kinds of attitudes and judgments about risk," is the characterization of risk.

Hadden (1989) and Sandman (1989) posit that risk is multifaceted, containing perhaps twenty different characteristics. These risky elements have been coined outrage factors. Outrage factors reflect the "relevant aspects about a risk besides how likely it is to be harmful" (Sandman, 1989, p. 45). The risk characteristics labeled as outrage factors by Hadden (1989) include the following paired dichotomy: voluntary or involuntary, familiar or unfamiliar, immediate or delayed effects, natural or artificial, controlled by the individual or by someone else, and visible benefits or no visible benefits (Hadden, 1989, p. 141). The first characteristic in the pair is associated with less risk than the second.

The purpose of this study is to estimate the effect these risk characteristics, described as outrage factors by Hadden (1989), have on consumers' risk perceptions toward rbGH. The outrage factors applicable to milk from cows treated with rbGH are uncertain future health effects, involuntary risk exposure, unnatural product characteristics, ineffective risk communication with an unfamiliar product, and consumers' inability to distinguish milk from rbGH treated herds compared to milk from untreated herds.

Theoretical Background

When consumers weigh the benefits and risks of a consumption good they are making decisions under uncertainty. One theory that examines the economic behavior of households under uncertainty is the von Neumann-Morgenstern expected utility theory (Machina, 1987). In the framework of an expected utility function E(U), a household member can make choices between a risky good x, and a riskless composite good y. The assumption is that the uncertainty in the expected utility function stems from possible health problems linked to the quantity of risky food consumed. The possible occurrence of an adverse health effect, is one of the assumed outcomes a household faces. The alternative is no adverse health effect.

If there is no adverse health effect (NH), the households state-dependent utility function is denoted by $U_{NH}(x,y)$ and by $U_H(x,y)$ if there is an occurrence of the health effect (H), where $U_{NH}(x,y) > U_H(x,y)$ (Machina, 1987). It is assumed that a household faces only these two outcomes with probability of occurrence as $1-\pi$ and π, respectively. Where, π, the probability of occurrence is assumed to be known to the individual and understood as the risk assessment estimated by experts. Therefore, the expected utility function is

$$E(U) = (1-\pi)\, U_{NH}(x,y) + \pi\, U_H(x,y). \qquad (1)$$

Viscusi (1990) utilizes the expected utility theory to model the discrete cigarette smoking decision. The two possible outcomes in Viscusi's (1990) model are life or death. When alive, utility received is U(smoke) if the individual smokes, and U(don't) when the individual does not smoke. The outcome of death offers a payoff V, representing the utility foregone from living, or the negative amount of utility one would have if they continued living. Associated with each outcome is the probability of occurrence. If one smokes, the probability of living is denoted as (1 - s), while the probability of death is s; and zero otherwise (Viscusi, 1990). Viscusi (1990) posits that an individual will smoke if

$$(1 - s)\, U(\text{smoke}) + sV > U(\text{don't}) \qquad (2)$$

meaning, an individual will smoke if the net gain from cigarette smoking (reflected by taste and price factors) is greater than the expected utility loss from death, or the foregone life expectancy.

Theoretical Model

This study applies Viscusi's (1990) decision model to identify whether or not Hadden's outrage factors are determinants of consumers' perceiving risk toward rbGH. In this study, consumers choose between the alternatives of perceiving no risk (NRP_{rbGH}) or perceiving risk (RP_{rbGH}) about rbGH. The uncertainty in this model is assumed to derive from possible health problems from the quantity consumed of the rbGH product. Thus, the outcomes are no adverse health effect or occurrence of an adverse health effect. When there are no adverse health effects, the individual will receive utility $U(NRP_{rbGH})$ if they perceived no risks, and $U(RP_{rbGH})$ if the individual perceives risk associated with rbGH. While Viscusi's (1990) model equated V to the payoff offered by the outcome death, this study defines it as the cost, C, of an adverse health effect occurring. As in Viscusi's (1990) model, probabilities are assigned to each outcome. If one perceives no risk from rbGH, the probability of no health effects occurring is expressed as (1 - π), whereas the probability of an adverse health effect occurring is π; and zero otherwise. Equation (2) is modified to represent the choice alternatives regarding rbGH, and probabilities associated with occurrence of each outcome,

$$(1 - \pi)\, U(NRP_{rbGH}) + \pi C > U(RP_{rbGH}). \qquad (3)$$

However, for the case of rbGH "no scientific evidence exists to suggest that humans are at risk in consuming milk from cows given rbGH" (CAST, 1993). Therefore, π, the probability of an adverse health effect occurring in equation (3) would be equal to zero and we would have a normal utility function. Slovic (1992) maintains that, "...experts define risk in a narrow, quantitative way, [while] the public has a wider view,...incorporating legitimate value-laden considerations." Therefore, an assumption of this model is that consumers use their own personal or subjective probabilities of the outcome occurring when deciding whether to perceive risks toward rbGH. Thus, π in equation (3) is modified to consumers' subjective probability of an adverse health effect occurring, π^*, while $(1 - \pi^*)$ is the subjective probability when no adverse health effect occurs; and zero otherwise. This study posits that an individual will perceive risk toward rbGH if

$$(1 - \pi^*)\, U(NRP_{rbGH}) + \pi^* C < U(RP_{rbGH}), \qquad (4)$$

meaning, a consumer will perceive risk toward rbGH if the subjective expected utility loss, or perceived health costs from consuming rbGH outweigh the utility from perceiving no risk toward rbGH.

Parametizing equation (4), an individual will choose to perceive risks toward rbGH if (Viscusi, 1990),

$$\begin{aligned} Pr(RP_{rbGH}) &= [Pr(B_1Y_1 + B_2\pi^*Y_2) < -u_2] \\ &= [1 + \exp(-B_1Y_1 - B_2\pi^*Y_2)]^{-1} \qquad (5) \end{aligned}$$

where B_i (i=1,2) represents the parameter vectors, Y_1 is a vector of attitudinal and demographic characteristics, Y_2 a vector of variables affecting utility loss, and a random error term, u_2.

It is reasonable to assume that consumer response to risk is affected by their attitudinal (behavior representing a strong belief) and demographic characteristics: knowledge, personal experience, demographics, economic situation, and social and cultural background (Hadden, 1989; Slovic, 1992). These attitudinal and demographic characteristics shape our unique experiences and may differ notably between consumers.

The vector of variables affecting utility loss are reflected by the outrage factors germane to rbGH. Theoretically, these outrage factors are characterized as risky elements, contributing to an increased probability of perceiving risks toward rbGH. First, in the absence of mandatory labeling by the FDA, rbGH imposes an involuntary risk on consumers. If consumers are not offered a choice between non-treated and treated herd milk, the more involuntary the risk exposure appears to be the greater the likelihood of perceiving risk of rbGH.

Second, rbGH is considered an unnatural or artificial product by some consumers. Studies have found that people are willing to accept greater "natural" product risks than risk associated with synthetic products (Busch, 1991). Milk is perceived as one of the few unadulterated, naturally produced products on the market today (Busch, 1991). The stronger these beliefs about milk's natural production, the more adverse the impact on risk perceptions.

Third, consumers must feel they can trust regulators, given biotechnology's complexity and unfamiliarity. A study of past technology introduction reveals a pattern of ineffective communication and lack of trust on the part of consumers toward regulatory enforcement agencies (Hermann, 1982).

Fourth, scientists are unable to detect any nutritional or physical appearance differences in the milk from treated versus untreated herds (CAST, 1993). Although rbGH's use may provide a benefit by increasing milk production efficiency and reducing market price, this benefit may not be great enough to offset risk perceptions toward this product.

Finally, consumers are concerned with possible delayed ill health effects of rbGH (Grobe & Douthitt, 1995). One may find that consumers do not have as great of a concern for health risks in the short run as they appear to have in the long run.

Data

Data were collected through a nationwide telephone survey of primary household food purchasers attitudes toward food-related biotechnologies. In this study, the data set used combined four survey samples: National (n=969), Wisconsin (n=187), Vermont (n=186), and Poor (n=568), consisting of 1,910 completed surveys. The sample results were weighted to ensure findings are representative of the U.S. population. Almost 72 percent of this study's respondents were women. This study's sample was more educated than the U.S. households, with mean age of householder a few years younger than U.S. households (45.6 versus 48.2). Close to 60 percent of this sample respondents were married, with an average household size of 2.87; for U.S. households, the respective figures are 54.9 percent and 2.63. Median income was higher than the U.S. households figure ($40,000 versus $31,241). Eighty percent of this sample were Caucasian, consistent with U.S. households, with approximate representation of other ethnic groups.

Empirical Model

Perceived risk in the theoretical model (RP_{rbGH}), was operationalized through consumers' current concerns of human ill health effects (CURRENTCON), and concern for the future discovery of human ill health effects (FUTURECON) toward rbGH (Table 1).

The data shows that over 75 percent of respondents' expressed some level of current concern about human ill health effects associated with rbGH, while 85 percent expressed concern over future discovery of ill health effects. This suggests that consumers have greater concerns for future health effects. Expressing equation (5) as two empirical models, for current (6) and for future (7) health concerns, allows testing of what factors, if any, are related to concern over health effects toward rbGH,

CURRENTCON = f (PURCHASE UNTREATED, MILK BELIEF, NO TRUST, NO CONSUMER BENEFIT, AWARE, PERSONAL CONCERN, POOR, GENDER, RACE, AGE, ENVIRONMENT, ANIMAL RIGHTS, FUTURE KIDS) + e_1. (6)

FUTURECON = g (PURCHASE UNTREATED, MILK BELIEF, NO TRUST, NO CONSUMER BENEFIT, AWARE, PERSONAL CONCERN, POOR, GENDER, RACE, AGE, ENVIRONMENT, ANIMAL RIGHTS, FUTURE KIDS) + e_2. (7)

Given the similarity of these two empirical models, definition of the independent variables in equations (6) and (7) will be discussed concurrently.

The outrage factor of involuntary risk exposure was measured through PURCHASE UNTREATED. One would expect those having the choice of purchasing milk from untreated herds would more likely perceive control in their choice decision, decreasing health concerns toward rbGH.

The outrage factor unnatural product characteristics was measured by MILK BELIEF, based on agreement to the statement "milk is natural." It was hypothesized that if one holds strong beliefs toward milk produced naturally, they would more likely be skeptical of an artificially produced product, increasing safety concerns toward rbGH.

The outrage factor of ineffective risk communication with an unfamiliar product was measured by the trustworthiness of the FDA as a food-related information source (NO TRUST). One would

Table 1
Variable Definition

Dependent Variables	
CURRENT CONCERN	=1 if little, moderate, or very concerned about current human ill health effects of rbGH; =0 if no concern
FUTURE CONCERN	=1 if little, moderate, or very concerned about future discovery of human ill health effects associated with rbGH; = 0 if no concern
Independent Variables	
PURCHASE UNTREATED	=1 if there are food stores in your area where you can purchase milk from untreated cows; 0 otherwise
MILK BELIEF	=1 if agreed somewhat or strongly that milk is natural; 0 otherwise
NO TRUST	=1 if they feel the FDA is not very or not at all trustworthy; 0 otherwise
NO CONSUMER BENEFIT	=1 if disagreed somewhat or strongly that the use of rbGH benefitted consumers; 0 otherwise
AWARE	=1 if respondent recalled having heard or read anything about rbGH; 0 otherwise
PERSONAL CONCERN	=1 if respondent changed their food habits because of concern about future personal and family health risks; 0 otherwise
POOR	=1 if poor (qualified as poor under the February 9, 1995, USDA poverty guidelines); 0 otherwise
GENDER	=1 female; 0 otherwise
RACE	=1 for African American, Asian, Native American or of Hispanic origin; 0 otherwise
AGE	Age in years
ENVIRONMENT	=1 if somewhat or strongly identified with environmentalists; 0 otherwise
ANIMAL RIGHTS	=1 if somewhat or strongly identified with animal rights groups; 0 otherwise
FUTURE KIDS	=1 if agreed or strongly agreed with the statement "I worry about the future that today's children are facing"; 0 otherwise

expect that as lack of trustworthiness in the FDA increased, confidence in the safety of the food supply is likely to decrease, thereby increasing health concerns toward rbGH.

The outrage factor of consumers' inability to distinguish milk from rbGH treated herds from milk from untreated herds was measured by NO CONSUMER BENEFIT. This variable is based on the respondents' disagreement with the statement "increasing milk production by farmers using rbGH has benefitted consumers." It was hypothesized that if the respondent does not feel that rbGH yields consumer benefits, they will be more likely to increase their health concerns toward rbGH.

Knowledge of the risk was measured by the respondents awareness of rbGH (AWARE). Respondents were asked "do you recall having heard or read anything about the use of a synthetic bovine growth hormone commonly called bGH or bst." Given that scientific evidence suggests no risks from consuming milk from treated herds, it was hypothesized that consumers who have knowledge about rbGH are less likely to worry about health concerns toward rbGH.

The variable measuring personal experience (PERSONAL CONCERN) was based on response to changing food habits because of concern about future personal and family health risks. It was hypothesized that concern about personal health risks positively influences rbGH safety concerns.

Factors reflecting economic situation and demographic characteristics were POOR, GENDER, RACE, and AGE. All but age were binary variables. It was posited that because those in poverty are more likely to direct their energy to their present situation, they will have more concern for current rather than future discovery of ill health effects of rbGH. Women were assumed to be more concerned than men about milk from rbGH treated herds. Race and age were hypothesized to positively and negatively influence health concerns.

Variables reflecting social and cultural background are group affiliation and locus of control. Group affiliation measures the respondents level of identification with environmentalists (ENVIRONMENT) and level of identification with animal rights groups (ANIMAL RIGHTS). Locus of control, a person's perceived sense of control over life events, was measured by FUTURE KIDS, which was based on agreement to the statement "I worry about the future that today's children are facing." The group affiliation and locus of control variables were hypothesized to positively influence health concerns. For example, environmentalists or animal rights groups may boycott milk if they believe the use of rbGH is harmful to the environment or cruel to cows, respectively, while others may believe their actions can not change the personal risks they face.

Empirical Results

The overall logit models were significant at the .0001 level, which implies that the models do a good job of explaining much of the health concerns toward rbGH. Regression estimates of equation (6) and (7) are presented in Table 2.

Hadden's (1989) outrage factors were found to be influential determinants of current and future health concerns. For both measures of concern, if the respondent agreed that milk is natural (MILK BELIEF), the probability that concern about health effects was expressed decreased by about one percent for current concern, and two percent for future concern. For those who felt there were no consumer benefits from farmers use of rbGH (NO CONSUMER BENEFIT), the probability that current concern about health effects was expressed increased by three percent, with an increase of five percent for those expressing concern about future health effects.

The variable measuring FDA trustworthiness (NO TRUST) was positively significant with current concern. When the respondent indicated less trust in the FDA, the probability of expressing current health concern increased by two percent. Finally, the outrage factor of involuntary control, measured by if the respondent was able to purchase milk from untreated herds (PURCHASE UNTREATED), was found to have a significant and negative effect on future concern.

As hypothesized, the attitudinal and demographic variables of GENDER, identified with environmentalists (ENVIRONMENT), identified with animal rights groups (ANIMAL RIGHTS), and worried about the future that today's children are facing (FUTURE KIDS) were significant and positive influences for both health concerns toward rbGH. For those respondents who changed their food habits because of a concern about future personal and family health risks (PERSONAL CONCERN), the probability of expressing future concern increased.

Conversely, if the respondent was not Caucasian (RACE equals one) the probability of expressing future concern decreased. The other attitudinal and demographic variables, AWARE, POOR, and AGE were insignificant.

Table 2
Parameter Estimates for Logit Results

Variable	Parameter Estimate	Marginal Effect*
Regression 1: CURRENT CONCERN (n=1813)		
CONSTANT	-2.229 **	
PURCHASE UNTREATED	-0.0298	-0.001
MILK BELIEF	-0.3752 *	-0.008
NO TRUST	0.9228 **	0.020
NO CONSUMER BENEFIT	1.2970 **	0.030
AWARE	-0.1527	-0.003
PERSONAL CONCERN	0.2437	0.005
POOR	0.1675	0.004
GENDER	0.9463 **	0.021
RACE	0.1691	0.004
AGE	0.0011	0.000
ENVIRONMENT	0.6789 **	0.015
ANIMAL RIGHTS	0.6088 **	0.014
FUTURE KIDS	1.4592 **	0.033
Log Likelihood -811.17 Chi-Squared 301.54**		
Predicted Correctly: 80%		
Regression 2: FUTURE CONCERN (n=1852)		
CONSTANT	-0.8361	
PURCHASE UNTREATED	-0.3970 *	-0.017
MILK BELIEF	-0.4154 *	-0.018
NO TRUST	0.5065	0.021
NO CONSUMER BENEFIT	1.1554 **	0.049
AWARE	0.0505	0.002
PERSONAL CONCERN	0.4016 *	0.017
POOR	-0.1961	-0.008
GENDER	0.6351 **	0.027
RACE	-0.3976 *	-0.017
AGE	-0.0087	-0.000
ENVIRONMENT	0.9982 **	0.042
ANIMAL RIGHTS	0.6387 **	0.027
FUTURE KIDS	1.3261 **	0.056
Log Likelihood -600.69 Chi-Squared 195.00**		
Predicted Correctly: 88%		

* Significant at the .05 level; **Significant at the .01 level.

* Marginal Effects Formula: $\delta P_i/\delta x_i = (e^{-t}/(1+e^{-t})^2)\ B_i$ where $t=B_0+B_1x_1+B_2x_2+\ldots B_nx_n$ and x_i=mean for continuous variables, mode for dummy variables.

Concluding Remarks

One conclusion seems evident from the data, consumers remain concerned about rbGH despite FDA approval. Typically when there is concern about new food technology it tends to trend down in time. With rbGH that has not been the case.

In attempting to explain the underlying reasons for consumer concern, this study hypothesized that Hadden's (1989) outrage factors would be influential determinants of consumers' risk perceptions toward rbGH. Results suggest that all but one of these risky elements elicited consumer outrage perceptions. This study shows that without perceived consumer benefits, consumers become intolerant of risk. In addition, consumers who distrusted the FDA as a food-related information source were more likely to be currently concerned about ill health effects of rbGH. This result may reflect consumer loss of confidence in regulators' abilities to protect them in the market. Further, results show that potential health concern is contingent on consumers' perceived control over the product. Establishing market alternatives where consumers can purchase milk from untreated herds may reduce future health concern. In contrast, consumers who have strong beliefs that milk is natural were not found to be more averse to an unnatural product. This result may suggest that consumers with strong beliefs hold on to them.

Nonetheless, sole consideration of these outrage factors provides a limited conception of risk. Including the attitudinal and demographic factors exhibit unique experiences that bring about notable differences between consumers. These factors further assist in understanding the consumer decision to perceive risk toward FDA approved rbGH.

This research could be improved by utilizing an ordered logit analysis to capture the magnitude of independent variable effects for the polynomial qualitative variables. In addition, evaluation of the don't know responses is warranted.

Acknowledgements

Financial support for this project was provided by the U.S. Department of Agriculture Cooperative State Research Service, National Research Initiatives Competitive Grants Program #9503405.

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Consumer Willingness-to-Pay for Food Safety: An Application of Binary-Ordinal Double Hurdle Estimation

A binary-ordinal double hurdle model is proposed for analysis of consumer willingness-to-pay for hydroponically grown vegetables in Taipei, Taiwan. Consumers' decisions of whether or not to pay more and how much more to pay are viewed as two interrelated decisions. Results show that cross-equation correlation is positive and significant. Estimates of the single equation model are biased and inconsistent, if this interdependency of error terms is neglected.

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Introduction

Evidence of environmental degradation and health risks associated with pesticide use have made food safety a priority issue on the public policy agenda. Today's consumers are more informed about health and nutrition, ask more questions, and express more concerns about food quality and safety. Kramer and van Ravenswaay (1989) suggest that pesticides and their use are the contemporary public issues of paramount importance that will not go away any time in the foreseeable future. Consumers' risk perceptions and concerns about use of pesticide chemicals in food production will translate into market behavior, and alter demand for food products in the marketplace. Thus, producers, processors, wholesalers/retailers, and government regulators and policy-makers will have to respond to consumers' risk preferences, concerns about environmental quality and demand for safe foods (Kramer, 1990).

While previous surveys have consistently found that consumers have perceived both high and increasing levels of health risks due to potential presence of pesticide residues on fresh produce, a more recent national survey conducted by the University of Kentucky suggests that pesticides pose a lower risk to consumers than does microbial contamination (Buzby and Skees, 1994). However, to alleviate consumers' pesticide fears, some food retailers have initiated their own residue-monitoring programs and are advertising their produce as being specifically tested for chemical residues. Others are promoting the sale of organic foods. In a survey of supermarket shoppers from four suburban areas in Atlanta, Ott (1990) reported that two out of every three shoppers were willing to pay 5% to 10% more for fresh produce that is certified free of pesticide residues. Similarly, Buzby and Skees found that more than half of the respondents indicated preference to buy organically grown fresh fruit and vegetables, and would be willing to pay more for produce that was certified as pesticide residue-free. How important is it to consumers that fresh produce should be free of pesticide residues? How much are consumers willing to pay for "cleaner" or safer produce? There are few empirical studies addressing these questions. Most previous studies are primarily descriptive in nature and little research has focused on the analysis of factors that may affect consumers' concerns or their willingness-to-pay.

The objective of this study is to propose a model for empirical estimation of consumers' willingness-to-pay for hydroponically grown vegetables (HGV). The proposed model formulates consumers' food safety preferences and willingness-to-pay as an integrated framework in the decision-making process. Specifically, this study develops a joint probit and ordered probit model to simultaneously estimate the interrelationships between the decisions of whether or not to pay more and how much more to pay for HGV.

Econometric Model and Estimation Procedure

The standard double hurdle model was proposed by Blundell and Meghir (1987) as an extension to the standard univariate tobit model for data involving a continuous dependent variable with censoring. Since survey data often exhibit censoring structure, double hurdle models have been widely used in empirical studies of commodity demand and labor supply. The advantage of the double hurdle model is that it allows for a more general stochastic structure so that the dependent variable and "censoring" process are modeled as separate (but correlated) processes or decisions. Nevertheless, when the data involve categorical dependent variables, the conventional double hurdle model may not be applicable.

One example is provided by Boyes et al. (1989) in their study of credit assessment problem. In order to provide accurate estimates on the probability of default or repayment, they developed a credit assessment model that consists of a credit granting and a loan default equation with binary dependent variables. Since only applicants that receive credit are observed either defaulting or repaying, the sample used to estimate repayment probabilities is censored and subjected to potential sample selection bias. However, the standard Heckman (1979) procedure or the double hurdle model is not applicable in such a case where both equations in the structure contain a qualitative dependent variable. Poirier (1980) showed that, under usual normality assumptions, the correct choice of distribution is a bivariate instead of a univariate probit model.

For the purpose of this study, we modified the bivariate probit model and extended it to include a probit and an (censored) ordered probit. Specifically, it is argued that in the case of willingness-to-pay for HGV, a respondent actually has two joint (simultaneous) decisions to make: 1) whether or not to pay more, and 2) how much more to pay as depicted by the diagram below. Previous studies have typically treated this consumer choice as a single decision-making process and estimated the willingness-to-pay with an ordered probit model (Misra et al., 1991).

To illustrate, the first equation that models the decision of whether or not to pay more for HGV is postulated as a function of consumers' risk perception and attitudes toward use of chemicals on food production. If the consumer has a desire to purchase HGV and is willing to pay more, then the intensity of his/her willingness-to-pay will be observed. Differences in socioeconomic characteristics are considered the underlying determinants that influence the extent of consumers' willingness-to-pay. Thus, the likelihood of how much more they would pay for HGV is hypothesized primarily as a function of consumers' socioeconomic characteristics.

The structure of the model that is exposed to the partial observability of the non-random sample selection rule is specified as:

$$d = \begin{cases} 1 & \textit{if} \quad \delta X + \varepsilon_d > 0, \\ 0 & \textit{otherwise}; \end{cases} \tag{1}$$

and given $d = 1$ for

$$y_i = \begin{cases} 1 & \textit{if} \;\; \mu_{j-1} < \lambda Z + \varepsilon_y < \mu_j, \;\; j = 1, \ldots, n \\ 0 & \textit{otherwise} \;\; . \end{cases} \tag{2}$$

Where d and y_i denote the decisions of willing to pay more and the amount of premium that a consumer is willing to pay for HGV, respectively; X and Z represent matrices of explanatory variables measuring the consumers' risk perceptions, attitudes toward the use of chemical pesticides on food production, and the socioeconomic characteristics associated with the consumers; δ and λ are vectors of unknown parameters to be estimated; $\mu_0, \ldots, \mu_n$ are the categorical thresholds for the underlying response variable (y^*) with $\mu_0 \leq \mu_1 \leq \ldots \mu_n$; and ε_d and ε_y are the disturbance terms with zero-mean, and normally distributed as standard bivariate, i.e., $\varepsilon_d, \varepsilon_y \sim f(\varepsilon_d, \varepsilon_y; \rho)$, where $f(\varepsilon_d, \varepsilon_y; \rho)$ is a standard bivariate normal density function and ρ is the correlation coefficient. The cumulative distribution function of $f(\varepsilon_d, \varepsilon_y; \rho)$ is denoted by $F(\varepsilon_d, \varepsilon_y; \rho)$. In addition, the model presented in equation (2) is underidentified since any linear transformation applied to the underlying response variable and threshold value μ_j would lead to the same model. For estimation purposes, it can be assumed without loss of generality that $\mu_0 = -\infty$, $\mu_1 = 0$ and $\mu_n = +\infty$.

Note that d in equation (1) is fully observed, but y_i in equation (2) is observed only among those respondents who chose to pay a premium for HGV. The distributional assumption of the equations (1) and (2) results in a system consisting of a probit and an ordered probit model, which are to be estimated jointly. Although equations (1) and (2) can be estimated independently with probit and ordered probit procedures respectively, there will be a loss of efficiency of the parameter estimates unless $\rho = 0$. More importantly, observations for equation (2) represent a 'choice-based' or censored sample which could be subject to potential selectivity bias if estimated separately.

The model is to be estimated by the method of maximum likelihood. Thus, the likelihood function for the proposed model is specified as:

$$L = \prod_{i=1}^{N} \prod_{j=1}^{n} P(d_i = 0)^{1-d_i} P(d_i = 1,\, y_{ij} = 1)^{d_i y_{ij}},$$

where $P(d_i = 0)$ represents the probability that the ith consumer would not pay more, and $P(d_i = 1, y_{ij} = 1)$

represents the probability that the ith consumer would be willing to pay the jth level of premium for HGV. In this study, efficient parameter estimates for δ, λ, and ρ that maximize the above likelihood function are obtained using the GAUSS program.

Sample Data

The data for this study are obtained from a survey of consumers conducted in 1995 by the Survey Research Office of the Academia Sinica, Taipei, Taiwan. The participants were female home makers selected for personal interview from a stratified random sample of 400 households resided in the city of Taipei. The survey was designed to assess consumers' awareness of potential health risk associated with pesticide residues on food, consumers' evaluation of food quality and safety, and their willingness-to-pay to reduce exposure to pesticide residues on food. The survey obtained information from participants with respect to food purchasing patterns and behavior; attitudes toward pesticide use on food production and assessments on the safety of food purchased; and willingness-to-pay for HGV to reduce exposure to pesticide residue on food. With respect to willingness-to-pay for HGV, the respondents were first asked if they would be willing to pay a higher price for hydroponic vegetables that are produced pesticide-free. If the responses were positive, the respondents were then queried to indicate how much more they would pay, relative to current prices, from a checklist of price premiums.

Prior to the survey, a focus group interview was conducted to pre-test and to improve the questionnaire design. The survey was conducted in the spring of 1995 and resulted in a total of 379 completed questionnaires — a 95% completion rate. Due to refusal and potential misreporting of income, the completed questionnaires from those who reported zero total household income were deemed unusable and excluded from the empirical analysis. In addition, a few households that provided incomplete information were also deleted from the sample observations. The final sample used for this analysis consists of 323 observations with completed information. In general, the majority of respondents was married woman who is the primary food shopper in the household. More than half of the respondents, 52%, were employed wives. The average household size was about 4.8 persons. Respondents who were 35 years old or younger accounted for 23% of the sample. Approximately 42% of survey participants had high school or above high school education, and 36% had an average monthly household income greater than $2,000. The definitions, means, and standard deviations of the variables used in the statistical analysis are shown in Table 1.

Empirical Results

Previous studies have identified a variety of demographic characteristics that may affect consumer attitudes and behavior. Zind (1990) suggested low-income consumers were more likely to buy organically grown produce regardless of cost. Ott (1990) developed a profile of demographic characteristics of consumers that would constitute a target market for certified pesticide residue-free produce. His results suggest white middle-class consumers over 30 years old would be a target market. For empirical implementation, the explanatory variable of equations (1) and (2) are specified to include a set of sociodemographic characteristics. In addition, a set of binary variables representing the respondent's general attitude toward pesticides use (BANPEST), attitudes toward food safety problem (REDUCE and NOCHNG), and the importance of price in making purchase decisions (PRICE) is also included in equation (1). Furthermore, the respondent's willingness-to-pay a premium for "antibiotic-free" meat is also hypothesized as a major factor that will influence the respondent's willingness-to-pay for HGV.

The maximum likelihood estimates of the binary-ordinal double hurdle model are presented in Table 2. For purpose of comparison, the results of a separate estimation are also presented. In general, the resulting estimates between the joint and separate estimations are consistent in signs. Most significantly, the estimate of ρ that maximizes the likelihood function is 0.663 and significantly different from zero at the 0.01 significance level, based on the *t*- test. This suggests that the unexplained residuals of the probit and ordered probit equations are highly correlated, and that joint estimation is appropriate to correct for the potential simultaneity bias and to yield more efficient and consistent estimates. The pseudo-R^2 that measures the goodness-of-fit is 0.227 for joint estimation, and 0.217 for separate estimation. As shown in Table 2, most of the parameter estimates showed a higher level of statistical significance when cross-equation correlation is accounted for. Notably, BANPEST and REDUCE in the probit equation and UNDER12 and INCOME in the ordered probit equation become statistically significant at the 0.05 significance level when both equations are jointly estimated.

Results of the probit equation indicate that those respondents who had small children in their households would be more willing to pay a higher price for HGV. Similarly, the variable EDUC also shows a

Table 1
Variable Definition and Sample Statistics.

Variable	Definition	Mean	Standard Deviation
d	= 1, would pay a premium for HGV; = 0, otherwise.	0.8390	0.9160
y_1	= 1, would pay up to 5% more; = 0, otherwise.	0.2570	0.5069
y_2	= 1, would pay 6% - 15% more; = 0, otherwise.	0.3901	0.6246
y_3	= 1, would pay 16% or more; = 0, otherwise.	0.1950	0.4416
AGE	= 1, if the respondent is 35 years of age or younger; = 0, otherwise.	0.2291	0.4786
EDUC	Years of education.	9.2453	10.2206
UNDER12	= 1, children under 12 years old are present; = 0, otherwise.	0.5449	0.7382
SICK	= 1, if any household members has a chronic disease; = 0, otherwise.	0.2291	0.4786
INCOME	= 1, if total household income is more than NT$30,000 per month; = 0, otherwise.	0.6471	0.8044
EATOUT	= 1, if eatout more than 3 times a week; = 0, otherwise.	0.0681	0.2610
PRICE	= 1, if price is important when buying fresh vegetables; = 0, otherwise.	0.1672	0.4089
MEAT	= 1, would pay a premium for "antibiotic-free" meat; = 0, otherwise.	0.9226	0.9605
BANPEST	= 1, if the respondent indicated that the use of all kinds of pesticides should be banned; = 0, otherwise.	0.0836	0.2891
REDUCE	= 1, will reduce consumption of vegetables if there is a report of pesticide contamination; = 0, otherwise.	0.6687	0.8178
NOCHNG	= 1, will not change consumption of vegetables even if there is a report of pesticide contamination; = 0, otherwise.	0.0712	0.2668

significant and positive effect, suggesting that the probability of willing to pay a premium for HGV increases with the level of educational attainment. As might be expected, the effects of MEAT and REDUCE on willingness-to-pay are found to be positive and statistically significantly different from zero at the 0.001 and 0.01 significance level, respectively. In contrast, EATOUT, PRICE, and NOCHNG are found to have negative impacts on the probability of paying a higher price for HGV. It is somewhat surprising to see that the variable BANPEST also shows a significant and negative effect, suggesting that the probability of willing to pay a premium decreases if the respondent believes that all pesticides use should be banned.

With respect to how much more a consumer would pay, the ordered probit results show that socioeconomic characteristics are the major factors that have significant impacts on the amount of premium that a respondent would be willing to pay for HGV. The results suggest that respondents with small children and higher education are less likely to pay higher premiums for HGV. However, those respondents who have family members suffering from a chronic disease and have higher household income are more likely than their counterparts to pay a price premium for HGV. It is interesting to note that while income is not a significant factor that affects the probability of willingness-to-pay, it does have a positive and significant effect on the amount of premium that a respondent is willing to pay. In other words, once a respondent has decided to pay a higher price for HGV, the amount of premium that the respondent is willing to pay increases as his/her household income increases. To the extent that higher income households have the ability and can afford to pay more, it is logical that they would be willing to pay a greater premium for HGV if they have a demand for it.

In general, the results support the notion that whether a consumer will pay more for HGV and the amount of premium that a consumer is willing to pay can be viewed as two different decisions. The results suggest that whether or not a consumer will pay a premium is influenced by socioeconomic characteristics as well as

Table 2
Results of Joint and Separate Estimation of the Binary-Ordinal Double Hurdle Model

Variable	Joint Estimation		Separate Estimation	
	Probit	Ordered	Probit	Ordered
Constant	-0.795^{c}	1.193^{c}	-0.827^{a}	0.929^{c}
	(-4.476)	(6.612)	(-2.535)	(6.316)
AGE	-0.126	0.184	-0.108	0.189
	(-1.028)	(1.732)	(-1.011)	(1.348)
UNDER12	0.373^{c}	-0.212^{a}	0.320^{c}	-0.164
	(3.501)	(-2.053)	(3.490)	(-1.280)
EDUC	0.073^{c}	-0.070^{c}	0.078^{c}	-0.059^{c}
	(5.871)	(-5.586)	(5.753)	(-3.975)
SICK	-0.059	0.498^{c}	-0.072	0.523^{c}
	(-0.383)	(3.731)	(-0.757)	(3.994)
INCOME	-0.043	0.286^{c}	-0.075	0.279
	(-0.494)	(3.575)	(-0.740)	(1.831)
EATOUT	-0.676^{c}		-0.629^{b}	
	(-9.331)		(-2.959)	
PRICE	-0.408^{c}		-0.325^{b}	
	(-4.496)		(-2.994)	
MEAT	1.209^{c}		1.265^{c}	
	(6.092)		(6.124)	
BANPEST	-0.489^{a}		-0.325	
	(-2.333)		(-1.375)	
REDUCE	0.287^{b}	-0.160	0.232	-0.138
	(2.666)	(-1.572)	(1.809)	(-1.261)
NOCHNG	-0.452^{a}	0.377	-0.495^{a}	0.299^{b}
	(-2.335)	(1.931)	(-1.960)	(2.295)
μ_1		1.226^{c}		1.310^{c}
		(11.618)		(15.136)
ρ	0.663^{b}			
	(2.683)			
Log-likelihood	-391.069		-392.856	
Sample size	323	271	323	271

^{a,b,c} Indicate that the estimated coefficient is statistically significantly different from zero at the 0.05, 0.01, and 0.001 significance level, respectively.

attitudinal inclinations. In contrast, socioeconomic characteristics appear to be responsible primarily for the determination of the additional amount of premium that a consumer is willing to pay for HGV. Furthermore, even in cases where both demographic and attitudinal variables are important factors for both of the decisions, the results show that in most instances they have different effects on the two decisions.

Conclusions

This study proposes a binary-ordinal double hurdle framework to model and estimate simultaneously a consumer's joint decisions of whether or not to pay a premium and how much more to pay for HGV based on data collected from a consumer survey conducted in the city of Taipei, Taiwan. The results show that unexplained residuals of the two estimated equations are highly correlated, and that more efficient parameter estimates are obtained from the joint estimation. If this interdependency is neglected, estimates of the model of single equations are likely to be biased and inconsistent.

Based on the empirical evidence, this study finds that those respondents who would pay a premium for "antibiotic-free" meat also are most likely to pay a premium for HGV. Similarly, respondents who had small children in the household, and who would reduce consumption of vegetables due to media reports of pesticide contamination are more likely than their counterparts to be willing to pay a higher price for HGV. With respect to amount of premium, the results suggest that socioeconomic characteristics are the major determinants that influence the respondents' choice of additional premium that they are willing to pay. The study shows that family health status and household income are the most important and significant factors that determine the amount of premium a consumer is willing to pay. However, they are insignificant in predicting the likelihood of a consumer's willingness-to-pay a higher price for HGV. The results show that, conditional on willing to pay more, a respondent would be most likely to pay 16% or more for HGV if there is a family member suffering from a chronic disease in the household. Similarly, as household income increases, those consumers who are willing to pay a premium for HGV most likely would pay a price premium at least 16% or more than the prevailing market price.

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Consumer Interests Annual *Volume 42, 1996*

Comparative Study of the Willingness to Pay for Organic and Irradiated Meat Products: An Experimental Design

Participants were willing to pay an average $1.16 premium for organic production, and $0.75 for irradiation. WTP was modelled as a two step process involving acceptance and level of payment. Perceived probability of foodborne disease was associated with acceptability of irradiation, and participants who had a full-time job were willing to pay less. No variables were significantly associated with acceptance of organic production. Income was negatively correlated with premium for an organic product.

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Introduction

The optimal level of provision for any good is the level at which the marginal cost just equals the marginal benefit. A properly functioning competitive market provides the optimal level of a good by equating marginal price and cost. In the case of market failure, private markets fail to provide the optimum level of a good. Determining the cost of providing a good for which there is no private market can be difficult. Often, however, determination of the net benefit is more difficult.

Net benefit can be estimated by summing the demand across the affected population. The maximum amount individuals are willing to pay for a good is a measure of net benefit. A variety of tools exist to estimate this net benefit. Estimation methods include contingent valuation, hedonic pricing, and experimental methods.

The demand for a particular process to increase food safety is well suited to estimation by experimental methods. Participants in an experiment have an incentive to pay an amount just equal to the perceived value of the process. There is little incentive for strategic bidding to purposely inflate or lower the price because the experiment is not hypothetical. Participants actually receive and pay for the good.

Two possible processes for increasing the safety of some foods are organic production and irradiation. There is not currently a USDA label, or even a generally recognized definition for organic meats. The definition of organic production used in this set of experiments was a product produced using meat from an animal raised without antibiotics, and raised on a diet produced without insecticides or herbicides. Irradiation of poultry has been approved to control salmonella, and irradiation of pork has been approved to control trichinella. Irradiation of beef has not been approved, but is being considered for approval to control e-coli O157:H7. The food item evaluated was a sandwich, described to participants only as a meat sandwich. The purpose of this series of experiments was to discover and compare the demand for organic production and irradiation.

Methods

A series of experiments was conducted in 1992 to determine adults' willingness to pay (WTP) for different aspects of food safety. Participants were non-student adults in northwest Arkansas. Fifteen to eighteen participants took part in each experimental session. Participants bid for the right to exchange a typical food product for one with an enhanced aspect of food safety. The experimental design was developed by researchers at Iowa State University, and has been used by researchers at both Iowa State University (Hayes, Shogren, Shin, and Kliebenstein, 1995) and the University of Arkansas to determine consumer demand for safer food products, and response to information.

Four sessions elicited participants' WTP for an organic food product, and four sessions elicited WTP for a product which had been irradiated to destroy disease-causing bacteria. A two-stage model was used that considers WTP for an irradiated or an organic product as the result of a two-stage process. 1) Acceptance of irradiation or organic production as an appropriate response to a perceived problem. 2) Determination of the maximum WTP. Variables related to WTP are not necessarily the same variables as those which determine acceptability.

The impact of variables on WTP is determined in a two-stage procedure. First a probit regression is performed to determine the impact of relevant variables on the likelihood that an individual will express acceptance of the process. The inverse Mill's ratio is saved from the probit regression. The inverse Mills' ratio is a monotonically decreasing function of the probability that an individual will express acceptance of the process. The inverse Mills' ratio and relevant independent variables are then regressed on the WTP using ordinary least squares regression (OLS), only for those individuals with a positive WTP. The resulting OLS coefficients express the estimated impact of independent variables on WTP, given the sample selection bias that only those individuals who accept the process are observed. The standard errors of the estimated coefficients in the OLS regression are corrected for covariance with the variables in the probit regression (Heckman, 1979).

Variables that might be expected to have an impact on the acceptability of organic production to decrease risk include the participant's age, gender, years of education, the presence of children in the home, and the perceived seriousness of chemical residues in the diet. Age was generated by subtracting the respondent's reported year of birth from 1992. Gender was expressed by a variable equal to one if male and zero if female. Level of education was recorded by category and the midpoint of the range was used in analysis. The presence of children in the home was coded as a dummy variable equal to one if the respondent reported any children in the household below the age of eighteen, and zero otherwise. The perceived seriousness of residues was determined by questionnaire before the experimental auction. Participants were asked to rank items which may have an impact on food safety from not at all serious (1) to very serious (5). Responses for pesticides/herbicides, additives/preservatives, antibiotics, and animal growth enhancers were summed to form a scale of perceived seriousness of chemical residues. The resulting scale had a range of from 4 to 20.

Variables that might be expected to have an impact on the level of payment, given the acceptability of organic production as a way of reducing risk, include household income, employment status, gender, and the number of meals consumed per week containing meat or poultry. Household income was determined by category, and the midpoint of the range was used in estimation. Employment status was coded as a dummy variable with those respondents who reported working full time (35 hours per week or more) coded as one and those not working full time coded zero.

Variables expected to have an impact on acceptance of irradiation as a way of decreasing the risk of foodborne disease included participant's age in years, gender, years of education, the presence of children in the household, perceived chance of food poisoning, and a remembered episode of food poisoning. The perceived chance of food poisoning was assessed before the auction. Participants were asked to estimate the number of Americans who become ill from a foodborne disease such as salmonella as the number per one million population. Because the relationship between the perceived chance of food poisoning and acceptance of preventative measures was expected to be multiplicative, rather than linear, the natural log of this perceived risk was used in the regression.

Variables expected to have an effect on WTP, given the acceptance of irradiation, included income, employment status, gender, the number of meals consumed per week containing meat or poultry, and the perceived seriousness of irradiation. Perceived seriousness of irradiation was assessed by asking participants to rate the seriousness of irradiation of food as it affects food safety on a scale from one to five, with one being "not at all serious" and five being "very serious".

Results

Participants were willing to pay an average of $1.16 to change from a typical sandwich to the organic sandwich, and an average of $0.75 for a sandwich that had been irradiated to destroy bacteria. The mean WTP for an organic sandwich, among participants with a positive WTP, was $1.38. Ten of sixty-two participants (16.1%) were unwilling to pay any additional amount for the organic sandwich. The mean WTP for irradiation, among those participants who expressed acceptance of the process, was $1.10. Nineteen of sixty participants (31.7%) were unwilling to pay any additional amount for the irradiated sandwich.

The Shazam econometric software package was used to estimate the two models. The model used fits the revealed WTP for an irradiated product much better than the revealed WTP for an organic product. The only variable approaching significance in the model of acceptance of an organic product was the presence of children in the home. Contrary to expectation, those respondents with children in the home were less likely to bid some positive amount for an organic product (Table 1). The hypothesis that acceptance of organic production is jointly independent of all variables considered can not be rejected.

In an analysis of the maximum level of payment, the only significant independent variable was

Table 1

Effect of variables on acceptability of the process:

Organic:

Variable	Coef.(Coef/SE)
Age (10yr)	-.0765 (0.535)
Presence of children	-.215 (1.385)
Seriousness of pesticide/chem	.0426 (0.708)
Education	-.0518 (0.584)
Gender	.545 (1.123)

Irradiated:

Variable	Coef.(Coef/SE)
Age (10yr)	-.0265 (0.189)
Presence of children	.104 (0.213)
Chance of food poisoning *	.246 (2.816)
Education	-.219 (1.817)
Gender	.520 (1.241)
Past Episode of Food Poisoning	0.977 (0.211)

* = $p < .05$

household income. Contrary to expectation, the estimated coefficient on this variable was less than zero, indicating that household income has a negative impact on WTP for an organic product. The higher a respondent's household income, the less they were willing to pay for an organic product (Table 2).

The model fit the observed WTP for an irradiated product much better (Table 1). The log of perceived risk was significantly and positively related to acceptance of irradiation, evidenced by a positive WTP (T-ratio = 2.816). Years of schooling was inversely related to acceptance of irradiation at a .01 significance level (T-ratio = -1.817).

The only variable significantly associated with the level of payment was employment status. Those respondents who reported working thirty-five or more hours per week were willing to pay 63¢ less for an irradiated product. The effect of household income on WTP was not significant, but the coefficient had the expected (positive) sign (Table 2).

Discussion

One of the reasons the model may have failed in the case of an organic product is the possibility of omitted variables. The perceived risk of food poisoning was a significant indicator of acceptance of irradiation. There was no comparable data available for perceived risk from pesticide residues or other chemicals. Perceived seriousness of pesticides and herbicides, additives or preservatives, antibiotics, and animal growth enhancers may not be a good proxy for perceived risk. Given the negative coefficient for the effect of household income on WTP for an organic production, it is likely that there is an omitted variable problem, and that this variable is significantly negatively related to income. Future experimental sessions should more directly determine the perceived risk from pesticide and other residues.

Acceptance of organic production as evidenced by a positive WTP is widespread. Half of all participants were willing to pay at least a $1.00 premium for an organic sandwich. Experimental demand for organic

Table 2

Effect of variables on WTP, corrected for acceptability of the process:

Organic:

Variable	Coef.(Coef/SE)
Income ($10K) *	-.225 (1.976)
Employment	-.428 (1.070)
Gender	0.338 (0.691)
Meals per week	0.0387 (0.637)

Irradiated:

Variable	Coef.(Coef/SE)
Income ($10K)	0.109 (1.226)
Employment *	-.632 (2.147)
Gender	-.0806 (0.257)
Meals per week	-.0061 (0.129)
Seriousness of Irradiation	0.002 (0.018)

* = $p < .05$

Figure 1
Demand for Organic Sandwich

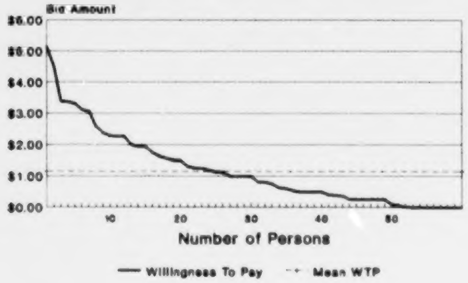
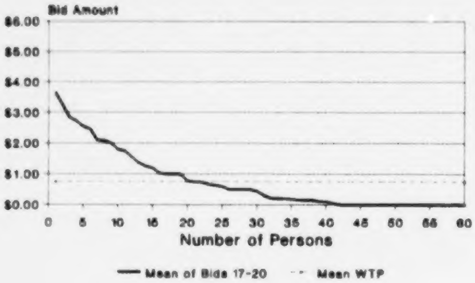


Figure 2
Demand for Irradiated Sandwich



production is shown in Figure 1. The median WTP for irradiation for all participants was $0.50. Estimated demand for irradiation is shown in Figure 2. It is possible that some participants with a recorded WTP for irradiation equal to zero would pay to avoid an irradiated product.

The actual amount consumers are willing to pay for irradiation is expected to be less than the experimental figure. Participants in experiments were unable to exercise other options generally available to consumers. They did not have the option of preparing the product at home, or of choosing a different product or source. The element of control has been shown to have a strong impact on perceptions of risk.

Experimental results suggest that the perceived benefits from organic production outweigh the perceived benefits from irradiation. More individuals accept organic production, and are willing to pay more for it. This is consistent with the findings of surveys which have generally shown consumers to be more concerned about pesticide and other chemical residues than about bacteria in food (van Ravensway, 1988), even though most food safety experts consider foodborne bacteria a greater risk.

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Consumer Interests Annual *Volume 42, 1996*

Life and Health Insurance Customer Complaints: An Illustration

Customer complaints related to life and health insurance are examined. Service related problems generated most complaints. In those instances where consumers do not feel empowered, they tend to file complaints through state departments of insurance.

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Introduction

Value of Customer Complaints

Customers who complain should be among the most important customers to a company. Contingent upon a company's satisfactory response to complaints, a larger number of complaints received may result in a greater number of satisfied customers. When a customer chooses to complain about a product or service, the opportunity arises for the company to satisfy the customer, retain the customer's business, and satisfy other present and future customers as well.

Customer complaints often signal problems with products or services that a company may be able to correct, thus improving product or service quality. This will certainly have positive results on customer satisfaction as well as sales. About 40 years ago, W. Edward Deming designed his famous chain reaction for businesses. Deming suggested that improving quality would decrease costs and thus increase productivity. In 1994, an article written by Brian Joiner proposed that a step be added to Dr. Deming's chain reaction. Joiner suggested that companies "increase complaints to improve quality to decrease costs to increase productivity" ("Turn Complaints Into Sales," 1994).

Listening to customer complaints may result in several positive outcomes for companies. Most companies desire to act fairly and honestly in order to maintain a positive reputation in the marketplace. Consumer complaints can alert a company to aspects of their product or service that may seem unfair or deceitful to its customers. Addressing these complaints could help a company maintain a positive image. Consumer complaints may also serve as early warning signals about product defects and possible violation of laws. These problems can be corrected quickly before more serious problems arise. Companies may also listen to consumer complaints to avoid bad publicity. Particularly assertive customers may write letters to third parties such as government agencies which may lead to third-party liability claims or government regulation. Companies which are already subject to government regulation may listen to customer complaints to avoid poor relationships with regulators. Finally, attention paid to customer complaints will increase profits over the long run by gaining new customers who have been referred by existing satisfied, loyal customers (Garman, 1995).

Importance of Satisfied Customers

Resolving customer complaints in a manner which is satisfactory to the customer will encourage the repurchase of a company's product or service. Another means of retaining customers is to satisfy them the first time they purchase a good or service. Doing the job right the first time will generally encourage further business transactions. Joiner (1994) reported that 70% of consumers with service problems do not complain. These customers also frequently indicated that they stopped using the product, especially if it cost more than $200. First-time satisfaction is a result of good product design and engineering, manufacturing, sales, and service practices. Any of these components may generate customer complaints upon which improvements may be made which will improve first-time experiences and, thus have a positive impact on sales. Customers who continue to buy because they have been consistently satisfied may also generate new customers (Garman 1995).

When companies listen to customers and respond quickly and effectively to their complaints, they produce brand loyalty. This is especially important in highly competitive industries where consumers can easily switch brands. Results of the Survey of Complaining Consumers conducted by Technical Assistance Research Programs, Inc. for the Coca-Cola Company found that 94% of the customers who were satisfied with the manner in which their complaint was handled would continue to buy at least at the same rate. However, only about 25% of those consumers who were not satisfied with the handling of their complaint indicated they would continue to buy at the same rate. This study also found customers who deemed the company's response acceptable told 5-6 people about this positive experience. However, customers who were not satisfied told 9-10 people about their negative experience ("Measuring the Grapevine-Consumer Response and Word-of-Mouth," 1982). These findings indicate the importance of making every customer's experience a positive one since positive experiences encourage retention and positive word-of-mouth testimony.

Satisfied customers save companies money. Since two-thirds of a company's business typically comes from repeat customers, it pays to keep current customers satisfied. When the cost of obtaining new customers is examined, the importance of satisfying customers the first time becomes even more apparent. It has been estimated that it costs about five times more to find a new customer than to keep an existing one. Companies will save money by concentrating on improving the quality of their products and services which will encourage their satisfied customers to speak of their positive experiences (Garman, 1995).

Summary of Complaint Data Significance

From the discussion above, it is clear that consumer complaints should be welcomed and analyzed for the ultimate purpose of improving customer satisfaction and enhancing customer loyalty. Customer complaints can help a company to identify possible violations of laws and problems with products and services. Correcting these problems can result in satisfied customers who advertise for the company through positive comments and exhibit a higher level of brand loyalty.

Analyzing consumer complaints is necessary to identify problems that can be resolved and situations that can be avoided in the future. Though it is important to resolve each complaint individually, a higher level of customer satisfaction may result if complaints are analyzed to identify significant problem areas. This paper is focused on an analysis of consumer complaint data. In the pages which follow, a consumer complaint data set is described and analyzed. Implications are drawn from the analysis.

Data and Analytical Approach

Complaint statistics from a large insurance company in Columbus, Ohio were analyzed to determine trends, relationships, issues, frequencies, and implications. The analysis is focused on life and health insurance complaints received between January 1, 1991 and June 30, 1994. Over this three and a half year period, 553 health insurance complaints were received and 449 life insurance complaints were received. Only those complaint categories for which at least 25 responses were recorded are considered (Table 1).

Table 1
Definitions of Complaint Types

Poor Time Service: Human factor determination relating to initial response time to the requestor.

Poor Service: Human factor determination relating to the general quality of service to the requestor.

Policyholder Service Miscellaneous: Specific instances of disappointments not coded elsewhere.

Service: Complaints regarding attributes of service or style of service.

Policyholder Service Delays: Response times after initial contact in servicing other than claims, underwriting, or sales.

Unkept Commitment: Human factor determination regarding alleged failure to follow through on a promise.

Incorrect/Insufficient Information: Inaccurate recording and use of information.

Agent Handling: General coding of agent involvement in an issue or service.

Alleged Misleading Statement or Representation: Contention that a statement or response made by a representative of the company lead to a mistaken action or belief to induce a sale.

Claims Delays: Response times related to the servicing of claims.

Rate Increase: Resulting amount charged is an increase over that previously encountered.

Unsatisfactory Settlement: Claim resolution amount or approach is disappointing.

Denial: Claim coverage and/or payment refused.

Premiums and Rating: Underwriting concern affecting amount to be paid for coverage.

No Response: Lack or absence of reply to inquiry or information request.

Refund: Handling of a return of premium.

Refusal to Insure: Underwriting concern affecting initiation of a policyholder relationship.

While it would be desirable to analyze the association between complainant characteristics and complaint type, this is not possible due to the nature of the data set. The data collection structure for insurance complaints is typically motivated by state regulations. In addition, since complaining is an inherently adversarial process, the less intrusive the complaint handling process, the more desirable it is perceived to be by both parties. This results in a data set consisting of names, addresses, dates, and type of complaint. Since there is virtually no data on the complainant, it is not possible to identify associations between complainant characteristics and type of complaint.

There is, however, an interesting piece of information in the data set for which identification of associations between this variable and type of complaint is fruitful. This variable is the type of "person" making the complaint. Insurance related complaints can come from a variety of sources including policyholders, state departments of insurance, consumer advocacy organizations, local government's consumer protection offices, and so on. In this study complaint source is categorized into three types: policyholder, state department of insurance, and other. It is worth noting that state department of insurance complaints typically originate with policyholders; however an important point is that state insurance regulations often require response or action within a specified time to complaints made through a state department of insurance.

Identifying associations between complainant type and type of complaint is useful because it may suggest how a customer perceives a company. If a customer believes that complaining to the company will not result in a satisfactory response, the customer may seek the assistance of a third party. However, if a customer perceives that the company will respond positively to the complaint, it is more likely that the company will be contacted.

Findings

Complaints Over Time

Over the 14 quarters studied, health insurance complaints generally declined (Table 2). In the first six months of 1991, 21.5% of all health insurance complaints were received while in the first half of 1994 9.9% of all complaints were received. This steady decrease may point to the implementation of new policies or practices that reduced the likelihood of consumer dissatisfaction.

A trend, such as that found for health insurance complaints, was not found with respect to life insurance complaints. Life insurance complaints tend to "bounce around" from six-month period to six-month period. For example, 14.7% of all complaints occurred in the second half on 1991; 19.6% of the complaints occurred in the first half of 1992; and 11.6% of the complaints occurred in the second half of 1992. Examination of Table 2 suggests the possibility that the incidence of complaints may have started to decline during the last year; however, subsequent time periods of data are needed to verify this perception.

Table 2
Life and Health Insurance Complaints Over Time

Time Period	Health Ins (percent)	Life Ins (percent)
1st half 1991	21.5	15.6
2nd half 1991	18.1	14.7
1st half 1992	17.5	19.6
2nd half 1992	11.6	11.6
1st half 1993	12.1	16.9
2nd half 1993	9.2	9.8
1st half 1994	9.9	11.8
N	553	449

Frequency of Complaints

The highest percentage of complaints for both types of insurance occur in service related areas (Table 3). This suggests that service was the most frequent cause of complaints for both health and life insurance. For health insurance the most critical issue was poor time service while service was the most critical issue for life insurance. Initial response time to the service requestor (poor time service) was associated with 21.0% of health insurance complaints and 15.8% of life insurance complaints. Complaints regarding attributes of service or style of service (service) were associated with 27.8% of life insurance complaints and 14.1% of health insurance complaints.

A second set of problems or issues that caused complaints related to agents. For health insurance, accuracy and adequacy of information provided by agents and how agents handled a situation were the most common causes of complaints. Inaccurate recording and use of information (incorrect or insufficient information) was reported in 14.1% of health insurance complaints and agent involvement in an issue or service (agent handling) was present in 14.3% of health insurance complaints. The same two issues, at higher relative values, emerged for life insurance. Incorrect or insufficient information was indicated in 16.9% of life

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insurance complaints and agent handling was associated with 21.2% of life insurance complaints.

The last set of complaints were caused by a set of issues related to the home office. These problems and issues were more common for health insurance than for life insurance. The most common issue for health insurance was denial of a claim, while the handling of a return of premium (refund) was the most common for life insurance. Denial was associated with 17.5% of health insurance complaints and refund was an issue of 6.5% of life insurance complaints. It is also interesting to note that claims delays and premiums/ratings were also relatively frequent causes of complaints for health insurance.

Table 3
Frequency of Complaints

Problem/Issue	Health Ins (percent)	Life Ins (percent)
SERVICE		
Poor Time Service	21.0	15.8
Poor Service	10.3	16.7
PH Service Misc	9.4	21.2
Service	14.1	27.8
PH Service Delays		8.9
AGENTS		
Unkept Commitment	5.8	6.0
Incorrect/Insufficient Info	14.1	16.9
Agent Handling	14.3	21.2
Alleg Mislead Stmnt/Rep	8.1	8.5
Claims Delays	11.4	
HOME OFFICE		
Rate Increase	7.1	
Unsatis Settlement	5.8	
Denial	17.5	
Premiums and Rating	11.0	
No Response		6.0
Refund		6.5
Refusal to Insure	6.9	
N	553	449

Percents do not add to 100 since a single complaint may have been associated with more than one problem or issue.

Sources of Complaints

When a service related problem or issue caused a complaint, relatively more policyholders filed complaints in every instance. This was the case for both health and life insurance (Table 4).

Relatively more policyholders also tended to complain with respect to problems or issues arising from the practices of agents and representatives of the company. The exception, however, was when an alleged misleading statement or representation was the cause of the complaint. In this instance relatively more state departments of insurance were the source for the complaint.

Most home office related problems/issues were associated with health insurance. When an unsatisfactory settlement, a denial, premiums and rating, or refusal to insure were the underlying issue or problem, relatively more state insurance departments filed complaints. However, when the issue or problem was a rate increase, relatively more policyholders filed a complaint.

Summary and Implications

Service is clearly a key cause of complaints. Problems or issues drawing the greatest number of complaints included initial response time to the service requestor (poor time service), general quality of the service to the requestor (poor service), specific instances of service disappointments (policyholder service miscellaneous), response times after initial contact in servicing other than claims, underwriting, or sales (policyholder service delays) and complaints regarding attributes of service or style of service (service). Policyholders appear to feel empowered to address these problems through direct interaction with the company as suggested by the finding that relatively more policyholders made service related complaints than did the other groups.

The most frequent problems found with agents involved alleged failure to follow-through on a promise (unkept commitments), inaccurate recording and use of information (incorrect or insufficient information), agent involvement in an issue (agent handling), and contention that a statement or response made by a representative of the company lead to a mistaken action or belief to induce a sale (alleged misleading statements or representation). Again, relatively more policyholders believe they can resolve these issues themselves. There is, however, one exception.

Table 4
Source of Complaint Related to Complaint Type

Problem/Issue	Health Insurance Source (percent)				Life Insurance Source (percent)			
	Policy Holder	Dept. of Ins	Other	N	Policy Holder	Dept. of Ins	Other	N
SERVICE								
Poor Time Service	64.7	27.6	7.8	116	84.5	11.3	4.2	71
Poor Service	80.7	15.8	3.5	57	82.7	10.7	6.7	75
PH Service Miscellaneous	65.4	28.8	5.8	52	74.7	17.9	7.4	95
Service	67.9	16.7	15.4	78	73.6	12.8	13.6	125
PH Service Delays					97.5	2.5		40
AGENTS								
Unkept Commitments	71.9	25.0	3.1	32	85.2	14.8		27
Incorrect/Insufficient Info	59.0	37.2	3.8	78	80.3	13.2	6.6	76
Agent Handling	67.1	24.1	8.9	79	82.1	12.6	5.3	95
Alleg Mislead Stmnt/Represent	40.0	60.0		45	60.5	39.5		38
HOME OFFICE								
Claims Delays	47.6	46.0	6.3	63				
Rate Increase	59.0	41.0		39				
Unsatisfactory Settlement	28.1	71.9		32				
Denial	22.7	74.2	3.1	97				
Premiums and Rating	45.9	52.5	1.6	61				
No Response					81.5	7.4	11.1	27
Refund					75.9	24.1		29
Refusal to Insure	39.5	47.4	13.2	38				

The one agent-related problem/issue for which relatively more state insurance departments filed complaints was alleged misleading statements or representations. Though the customer may perceive the company to be receptive to these complaints, the customer may no longer trust the company. The state department of insurance may be perceived to be a higher authority who will protect the consumer's interests.

For complaints related to the home office, there is a clear switch from policyholders filing complaints to state departments of insurance filing complaints. This is the case for complaints arising from unsatisfactory settlement, denial, premiums and rating, and refusal to insure. Interestingly, each of these involves an action of closure by the company. For example, an unsatisfactory settlement complaint indicates that the amount of claim paid or approach used to handle a claim is disappointing. A complaint arising from denial indicates that claim coverage and/or payment has been refused. Though the company may actually be receptive to the customer's concerns about these issues, the customer may perceive that the company has closed the case. The customer then appears to seek the assistance of a "powerful" third party.

It is also interesting to note that there are more issues related to the home office for health insurance than for life insurance. This is not surprising given the frequencies of interactions between a policyholder and the company when seeking reimbursement for health insurance claims. This also relates to the prominence of denial and claims delays. It appears that when policyholder has a problem with the home office, s/he feels more helpless and tends to seek the help of the state department of insurance, especially where there is disagreement on how the payment of a claim was handled.

Conclusion

It appears from our analysis that improving service would reduce the number of complaints filed with the home office. It also appears that policyholders see the home office as a viable place to complain when the company is perceived to be somewhat open in addressing an issue or problem. However, when policyholders believe they have been "wronged" by not receiving full payment of a claim or have been "lied to," they will seek assistance from the state department of insurance. In this instance policyholders appear to believe that the company cannot be trusted or that there is an inherent conflict of interest which limits a company's willingness to address a problem or issue.

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Endnotes

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Limited Partnerships, An Inappropriate Purchase: A Profile of Individuals Seeking Restitution

A group of consumers seeking retribution for the purchase of certain limited partnerships is examined. The appropriateness of their investment, given their age, education, level of investment experience, and risk orientation is investigated.

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Introduction

On October 21, 1993, Prudential Securities Incorporated (PSI) reached a settlement with the U.S. Securities and Exchange Commission (SEC), securities regulators from 49 states, and the National Association of Securities Dealers (NASD) for violations of securities laws in the sale of certain limited partnerships. Admitting to sales abuses during the 1980s, PSI, Prudential-Bache Securities, Inc. and Bache & Co. Inc. accepted responsibility for selling limited partnership interests to persons for whom such investments were not suitable in light of their stated investment objectives, financial status, investment sophistication and other factors. PSI allegedly misrepresented and omitted material facts regarding the present and future value of assets owned or to be purchased by limited partnerships, the nature of the businesses owned or to be operated by them, or the projected profitability of such investments.

Over 700 limited partnerships were marketed and sold as safe investments. The highly speculative nature and risks associated with the partnerships were not shared with investors. As a consequence of these ubiquitous abuses, Prudential was directed to pay compensatory damages to aggrieved investors by way of an independent arbitration process. A $330 million open-ended reparation fund was initially established and subsequently increased to over $660 million. Prudential has set aside $1.4 billion to resolve claims and thus far has paid out more than $768 million (AP, 1995).

Background

Since the inception of the limited partnership, $140 billion has been invested into limited partnerships, with the heaviest investment taking place between 1983 and 1986 (Thompson & Dagbjartsson, 1991). Of the more than one hundred billion dollars' worth of limited partnerships sold during the eighties, PSI sold $8.5 billion to private investors (Mahar, 1995). Approximately 325,000 Prudential investors were eligible to seek restitution for investments in 708 limited partnerships purchased between 1980 and 1990.

Limited partnerships were a conceptually enticing investment. Individual investors entrusted their funds with a general partner responsible for acquiring and managing assets. The investor, a passive partner with limited liability, benefited three ways. First, cash flows resulting from assets were to be paid out as periodic distributions. For example, investors in real estate limited partnerships were to receive cash distributions from rent. Second, tax benefits resulted. Partnerships operating at an initial loss allowed investors to reduce taxable income from depreciation.Third, investors eventually hoped to gain capital appreciation and proceeds from the sale of assets, usually after a holding period-- anywhere from five to ten years (Thompson & Williams, 1990).

Partnerships investing in oil, gas, real estate, research and development, entertainment, and cable television were highly speculative, however in the case of Prudential, 325,000 investors bought into the concept of limited partnerships. While the benefits were alluring, there were unforeseen deficiencies. First, investment principal in partnerships were often devoured by fees and charges. Further, cash distribution amounted to only a small percentage of investor's original capital. Second, tax sheltering that lured investors to limited partnerships died with the 1986 tax reform law. Third, appreciation yields from partnerships were to result in five to seven years, however many have drawn out over 15 years. Although a risky investment, brokers misled investors by presenting the instruments as safe and often promised 15 to 20 percent returns on investments. In actuality, most investors have realized only half the amount. Many investors with capital currently wrapped up in limited partnerships are realizing only one and two percent returns annually (Mahar, 1995). Limited partnerships are not currently traded on any of the exchanges, however a secondary market is thriving. Volume in the secondary market increased 50 percent in 1994, with limited partnerships trading at a discount between 20 and 60 percent (Mahar, 1995).

The Prudential settlement is the largest ever reached by regulators and a brokerage firm. Under the settlement procedure, PSI was required to notify any investor who purchased any of 708 Prudential partnerships between 1980 and 1990 (Siconolfe, 1994). Investors were eligible to seek recovery for compensatory damages, which included interest on the capital investment (calculated at the annualized Treasury-bill rate during the time of the investment). Punitive damages and attorney's fees were not eligible. To determine the recovery amount, investors were required to complete a claim form and return it to the claims administrator. The claim form accounted for factors relating to circumstance surrounding the sale. For example, whether investors received any sales and marketing materials and the suitability of the investment at the time of the purchase given the investor's age, financial status, investment sophistication and investment objectives were taken into account. Further, misrepresentations in connection with the sale, loss incurred, residual value of the investment, distributions and tax benefits received were also considered in the recovery amount.

This study is exploratory. The purpose was to examine consumers who purchased Prudential limited partnership (LP) investments between 1980 and 1990. Specifically, the consumers were examined descriptively in terms of demographic characteristics, level of investment experience and risk orientation.

Methodology

The Sample

The study examines a unique sample consisting of a group of 230 Prudential LP investors who retained a law firm to assist them with the court ordered compensation process. A partner of the law firm, with expertise in securities litigation, believed the preparation of the claim form to be critical to the amount investors recovered. The firm sponsored free seminars in retirement areas of Colorado, Florida, and Arizona in early 1994 to solicit individuals with a minimum investment of $5,000 in Prudential limited partnerships. A fee of $100 was charged to retain the firm.

There are some obvious limitations associated with the data set that need to be acknowledged. First, the sample is limited because it is derived from a restricted geographic area and made up principally of older subjects. Second, the sample was unique among other Prudential investors because they sought legal aid in the retribution process. Since they received legal advice while the majority of investors completed the form on their own, the information provided may differ. Third, findings may be limited by the reliability and accuracy of the data reporting of clients. There is a moral hazard associated with the type of information. The Prudential fraud was highly publicized in local and national newspapers, with some articles giving advice on how to maximize recovery for damages. Influences from the media as well as legal advice may have had an affect on the information submitted.

Variables Examined and Analysis

The study examined demographic characteristics, investment experience prior to the LP investment and level of risk orientation. Specifically, age, education, annual gross income, net worth, number of dependents and retirement status were evaluated. Discussion is limited to investment experience regarding the first PSI LP purchase. Indices were formulated to assess level of investment experience and risk orientation of the sample.

Specifically, an experience index was derived from information regarding whether the client had ever invested in any one of 20 different types of investments prior to 1975. Clients who had previously made between one and five were considered less experienced, between six and ten were considered experienced and between 11 and 20 were considered very experienced. Similarly, a risk orientation index was formulated from the twenty securities clients specified investing in prior to 1975. Each of the twenty instruments was assigned a number according to the degree of risk commonly associated with it. A conservative investment instrument was assigned a -1, a moderately risky investment received a zero and a risky investment received a +1. Clients scoring between -4 and -2 were classified with a negative risk orientation, -1 to 1 with a neutral risk orientation, and two to five positive risk orientation.

Real estate, oil and gas, and other limited partnerships were among the twenty securities client invested in prior to 1975. Assuming the complainants were not fully apprised of the risks associated with investing in limited partnerships, a second risk orientation index was developed. The index was similar to the other one except that three types of limited partnerships were omitted.The rationale for including LPs in the first formulation was because limited partnerships were relatively new and had yet to be proven successful beyond tax benefits, consequently investors were taking a degree of risk. Basic descriptive statistics and the formulation of indices was employed to evaluate investors and investment behavior. Chi-square test of association was performed on the data to test for within group differences among selected variables.

Results

Demographic and Financial Characteristics

Of those clients retaining the firm, 47 percent were over 62 years and 69 percent were retired at the time of the first LP investment. More than 75 percent were married and more than one half (55%) reported one independent. The sample was an educated group with more than half (54%) being college graduates or having post graduate education. At the time of the first PSI LP purchase, clients had a mean gross annual income of $62,523 and a mean total net worth was $527,009. Table 1.

Investments in Limited Partnerships

The number of LPs purchased ranged from one to 27 with four being the average. The mean amount invested in an LP was $67,463, with a range of $1,700 to $900,000. On average, the first limited partnership represented 15 percent of "total funds invested plus funds available for investment." Approximately 78 percent of clients reported to have between one and 20 percent of investable income in PSI LPs, 17 percent had between 21 and 40 percent, two percent had 41 and 60 percent, less than one percent invested between 61 and 80 percent, while three percent had invested 81 to 100 percent. Table 2.

Investment Experience

Of the 20 possible investment instruments clients invested in prior to 1975, the most instruments a client purchased was 18, the least was one. Sixteen percent of clients were less experienced, 47 percent were considered experienced, and 37 percent were considered very experienced (Table 2). Table 3 presents the data for statistically significant associations found among the level of investment experience and other variables. Percentages have pluses and minuses beside them to indicate the direction of the difference in observed and expected frequencies and their contribution to the overall chi-squared results. (A plus indicates that observed frequencies exceeded expected frequencies, while a minus indicates that observed frequencies fell below the expected frequencies). The percentages of less experienced, experienced, and very experienced clients and their response to the question of whether they had invested in any other limited partnerships prior to the first Prudential are presented at the top. Of those not investing in a LP prior, fewer "less experienced" clients (18%) than expected were observed. Of those investing in a LP prior to the Pru purchase, most (63%) were "very experienced" investors.

Table 1
Sample Demographic and Financial Characteristics

Age (N=229)*	Frequency	Percentage
25 through 50 years of age	56	24
51 through 61 years of age	64	27
62 years of age or older	109	47
Education (N = 230)	**Frequency**	**Percentage**
Less than high school	10	4
High school graduate	52	23
Some college	44	19
College graduate	85	37
Post graduate work	39	17
Marital Status (N = 230)	**Frequency**	**Percentage**
Married	176	77
Separated	7	3
Divorced	8	4
Widowed	20	9
Single	19	8
Dependents (N = 230)	**Frequency**	**Percentage**
0	62	27
1	126	55
2+	42	18
Retirement Status* (N = 221)	**Frequency**	**Percentage**
Retired	120	52
Employed	109	48
Annual Gross Income* (N = 227)	**Frequency**	**Percentage**
Less than $25,999	61	27
$26,000 through $50,999	71	34
$51,000 through $75,999	41	18
$76,000 or more	51	22
Mean gross income ($62,523)		
Median gross income ($41,075)		
Est. Total Net Worth* (N = 228)	**Frequency**	**Percentage**
Less than $100,000	33	14
$100,001 through $250,000	80	35
$250,001 through $400,000	36	16
$400,001 through $650,000	30	13
$650,000 or more	49	22
Mean net worth ($527,009)		
Median net worth ($253,625)		

** At Time of 1st LP Purchase*

In regards to annual gross income at first LP purchase, a larger proportion of the clients than expected in the lower income groups were less experienced (26%) and experienced (56%). At the other extreme, of those in the highest income group, more than the expected number were very experienced investors (67%).

The association between experience and net worth was assessed using two measures of net worth --

Table 2
Investment Experience and Risk Orientation

Characteristic (N = 230)	Theoretical Range	Sample Range
Investment Experience Index	1 to 20	1 to 18
Risk Orientation Index	-6 to 9	-3 to 5
Inclusive Risk Orientation Index	-6 to 8	-4 to 3
Investment Experience Index	Frequency	Percentage
Less Experience	36	16
Experienced	109	47
Very Experienced	85	37
Inclusive Risk Orientation Index	Frequency	Percentage
Negative Orientation	20	9
Neutral	125	54
Positive Orientation	85	37
Risk Orientation Index[a]	Frequency	Percentage
Negative Orientation	83	36
Neutral	138	60
Positive Orientation	9	4
Number of Pru LPs Purchased	Frequency	Percentage
1	64	28
2	46	20
3	41	18
4	24	10
5	13	6
6+	42	18
Range: 1-27 Mean # purchased: 4		
% of Total Invested/Investable Funds Represented by 1st LP Purchase	(N=226) Frequency	Percentage
0-20	176	78
21-40	39	17
41-60	4	2
61-80	1	1
81-100	6	3
Mean investment: $67,463		

[a] Excludes oil and gas, real estate, and other limited partnerships.

one measure including all assets and a second measure excluding home, cars, and furnishings. Using the more complete measure of net worth, of those clients having a net worth of the $500,000 or more, 67 percent were very experienced. When home, cars, and furnishings were excluded, 68 percent of those in the largest net worth category were very experienced. Table 3.

Clients estimated the percent of "total funds invested plus funds available for investment" represented by the purchase of PSI LPs (Table 3). The striking aspect of this table is that in the lowest category (0-20) all experience levels are present at lower than expected relative frequencies; however, at virtually all other levels, the observed relative frequencies exceed the expected. Of particular note, the highest two categories (61-80, 81-100) had no very experienced investors.

Table 3
Association Between Investment Experience and Selected Variables

	Investment Experience (percent)		
Invested in other LP Prior**	Less Experienced	Experienced	Very Experienced
Yes	7	30	63 (+)
No	18 (-)	53 (-)	29 (-)
Annual Gross Income at 1st LP Purchase**			
≤$25,999	26 (+)	56 (+)	18
$26,000 - $50,999	16	53 (+)	31
$51,000 - $75,999	7	54 (+)	39 (+)
$76,000≥	10	24	67 (+)
Total NW at 1st LP Purchase**			
≤ $500,000	19	55 (-)	27 (-)
$500,000 ≥	7	27	67 (+)
NW w/Exclusions[a] at 1st LP**			
≤ $500,000	17 (-)	53 (-)	30 (-)
$500,000 ≥	7	25	68 (+)
% of Total Invested /Investable Funds Represented: 1st LP*			
0-20	9 (-)	47 (-)	44 (-)
21-40	33 (+)	54 (+)	12
41-60	50 (+)	25 (+)	25 (+)
61-80	100 (+)	-	-
81-100	33 (+)	67 (+)	-

[a] not incl. home, cars, and furnishings
**P* value = <0.01 ***P* value = <0.001

Risk Orientation

As noted above, risk orientation was assessed including and excluding LPs (Table 2). Less than ten percent (9%) of clients had a negative risk orientation using the more inclusive measure, while more than half (54%) were neutral in orientation. Approximately 37 percent of clients had a positive risk orientation. In regards to the second risk orientation index, 36 percent of the clients had a negative orientation, 60 percent neutral, and only four percent high.

Table 4 presents statistically significant associations found between the inclusive measure of risk orientation and investment experience and amount invested in LPs. Percentages have pluses and minuses beside them to indicate the direction of the differences between observed and expected frequencies. Clients with less investment experience tended to have a negative (14%) or neutral (75%) risk orientation. A significant association was also found between risk orientation and the amount of money invested in limited partnerships. Clients investing more than $75,001 tended to have a neutral (44%) or positive (45%) risk orientation.

Table 4
Association Between Risk Orientation and Selected Variables

(N = 230)	Risk Orientation (percent)		
Investment Experience**	Negative	Neutral	Positive
Less experienced	14 (+)	75(+)	11
Experienced	5	55	40
More experienced	12	45	44 (+)
Total Amount Invested in Pru LPs* *(N=228)*			
≤$25,000	5	53	42
Between $25,001 - $75,001	11	62	26
$75,001≥	11	44(+)	45 (+)

**P* value = <0.05 ***P* value = <0.01

Discussion

The most vulnerable of securities fraud victims are senior citizens, with thirty percent of all securities fraud victims being 65 years or older (North American Securities Administrators Association). Exacerbating the situation, three out of four senior citizens rely on investment income to meet some of their daily living expenses (Congressional Record, S9205). Almost half of the clients in this study were beyond retirement age at the time of the first LP investment with 69 percent retired at the time of the first LP purchase. It is clear from these figures that at the time of the PSI investment the majority of clients were concerned with retirement funding. In data not reported here, the majority of investors specified conservative investment objectives, with ten percent of clients invested for retirement savings and 84 percent of clients indicated income and capital preservation. The sale of limited partnership investments in this case appears to be unsuitable in light of investment objective and investor's age.

Clients were better off compared to the average American household. Income was higher when compared with similar statistics provided by the Current Population Reports (CPR). In CPR 1990 the median income of all households was $30,786 and for households with head aged 65 years and over income was $17,160. Comparatively, the sample's median gross annual income at the time of the first LP purchase was $41,075. Since this predates the CPR, client income figures may be slightly underestimated since it has not been adjusted for inflation.

Comparatively, the median net worth of clients was $253,625 at the time of the first LP purchase, 1989 CPR indicates median net worth excluding home equity was $9,840 for all households and was $23,856 for household with head 65 years and over. The client's median net worth excluding home, cars and furnishings was $351,906 at the time of the first PSI purchase.

These comparisons indicate income and net worth of the sample to be much higher than the average household, however it is important to note that these values declined between the time of first purchase and the time the claim was filed (date not reported here). While comparing income figures to the population as a whole may suggest clients can afford the loss, the increased number of clients in retirement, the decreased annual gross income, and their investment objectives make the investments inappropriate.

Supporting the allegations that PSI limited partnership investments were misrepresented by brokers was client risk orientation. While the first risk orientation index found more than 60 percent of clients to have a negative or neutral risk orientation, the second risk index indicates over 95 percent of the clients were negative or neutral in risk orientation. The second risk orientation index indicates the sample to be a highly risk averse group of investors, supporting the case that investors were misinformed of the nature of the LP investment.

Conclusion

With investment company assets surpassing total commercial bank deposits for the first time in American history, policing of securities markets and protection of consumers from securities fraud is needed now more than ever ("SEC Chairman," 1994). Further, not only have investors reported twice as many securities frauds to the SEC in 1993 as in 1981, the number of securities fraud cases brought by state and federal authorities have increased by 45 percent (SEC and NASA). Despite over 60 percent of the sample having at least some college, more than 80 percent being fairly sophisticated in their investment experience, and over 90 percent possessing a relatively negative to neutral risk orientation, as a group they were victims of securities fraud. The securities market is complex for sophisticated investors, let alone less knowledgeable and experienced.

This study demonstrates the vulnerability of many investors in terms of the securities market investments and suggests the need for consumer protection. However, consumer protection in the securities market is currently under fire with pending legislative reform. Both the U.S. Senate and House of Representatives have drafted bills to support legislative reform of securities laws. All parrt of the House GOP's "Contract with America," the legislation follows the new product-liability bill as an attempt to curb unmeritorious securities lawsuits. While legislative reform may be necessary to control unworthy lawsuits, the protection of consumers is greatly jeopardized by the proposed bills (Lowenstein, 1995).

Demanding a delicate balance of both, the legislation in the area of consumer protection and the securities industry has essentially two dimensions, protection of the consumer and protection of issuing firms. The proposed bill limits the protective rights of investors by reducing the statute of limitations for filing securities-fraud lawsuits from five years to three; and creating a "safe harbor" for firms erroneously predicting future earnings and performance. Further, the judge can request punitive damages from the plaintiff if the law suit is considered frivolous, therefore shifting fees and costs to the plaintiff, rather than each side paying its own fees and costs. Further, professionals (e.g. accountants, auditors, attorneys) assisting in underwriting prospectuses who make any misstatements or misrepresentations have legal protection and auditors who fail to detect fraud would have limited financial liability (Raghavan, A., Lohse, D. & Anderson, M., 1995; Spain, C.L. 1995; Taylor, 1995). While professional litigators exist, private lawsuits provide additional enforcement of securities law and the SEC considers them essential to supplement their own protective efforts (S. Rep. No.98, 1995; H.R. Rep. No.50, 1995)

The Prudential case is the SEC's largest securities fraud settlement. Had the proposed legislation been enacted two years earlier, the statue of limitations would have eliminated opportunity for legal redress for 325,000 consumers investing in Prudential Securities limited partnerships. If the reform bill is passed the rights of 1.79 million investors to recover $2.87 billion will be eliminated (NASAA). Fortunately for Prudential investors they were supported by legislation currently in place and the SEC's goal to protect the interest of investors was upheld.

Acknowledgements

Cooperation and provision of client information by the law firm are appreciated.

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Endnotes

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The Elderly: Vulnerability to Deception and Fraud

The elderly consumers' vulnerability to deception and fraud was investigated using the 1993 Survey of Consumer Behavior commissioned by The American Association of Retired Persons. Compared to younger consumers, elderly consumers were found to be less wary to unfair business practices and less knowledgeable, and thereby more susceptible to deception and fraud. The implications for consumer educators and policy makers were drawn from the findings.

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Introduction

Consumer fraud against the elderly is growing, and the effect of fraud on the psychological, physiological, and economic well-being of the elderly can be devastating ("Fraudbusters," 1991; Harris, 1995; McGhee, 1983). Although the literature on consumer vulnerability and victimization to deception and fraud provides a variety of theories and compelling reasons of why the elderly consumers are more vulnerable to fraud (Butler, 1968; Brill, 1992; Dowd, 1975; Kuypers & Bengston, 1973; McGhee, 1983; Moon, 1990; Moschis, 1994), empirical research efforts to investigate the susceptibility of elderly consumers have been limited. This issue is addressed in this study. The purpose of this study is to examine the extent of the elderly consumers' (age 65 or older) vulnerability as compared to the younger consumers'(age between 18 to 64).

Literature Review

The literature on consumer victimization of the elderly has developed mainly along three research streams: (1) the cognitive and physiological impairment paradigm, (2) the social interaction paradigm, and (3) taxonomies of scams, schemes, and abuses. First, according to the cognitive and physiological impairment paradigm, a normal aging process often results in cognitive and physical impairment, which consequently makes older consumers more vulnerable. The physical impairment includes decreased physical strength, reduced hearing and eyesight (Butler, 1968; McGhee, 1983), while the cognitive impairment includes declines in memory, information processing, and other problem-solving skills (Cole & Gaeth, 1990; Gaeth & Heath, 1987; John & Cole, 1986; Moschis, 1994; Zeithaml & Fuerst, 1983).

The cognitive and physical impairment literature provides valuable insights to the elderly's competency of decision making. However, since these studies have been typically conducted on controlled laboratory conditions, important variables which influence consumer competency of decision making in the market place, such as market knowledge, negotiation skills, and awareness of deceptive business practices, have not been fully incorporated into these investigations.

Second, the Social Interaction Paradigm explains the elderly consumer's vulnerability in terms of social isolation: Social isolation makes individuals less connected to friends and their sources of information or support as well as more responsive to the sellers who help them feel less useless by paying attention to them (Butler, 1968; Friedman, 1992; Philips & Sternthal, 1977). Thus, isolated consumers are eager to socialize, even with strangers, while they may not be aware of normative beliefs related to fair treatment in the marketplace due to a lack of social interaction. Although social isolation can be a life-long isolation, elderly consumers are more likely to experience it as a consequence of ill health or the loss of roles associated with retirement, widowhood, or death of friends (Butler, 1968; Moon, 1990; Kuypers & Bengston, 1973).

The Social Exchange Theory first posited by Emerson (1962) and Blau (1964) integrates the previous two paradigms: the cognitive and physiological impairments, and the social interaction. The Social Exchange Theory proposes that cognitive, physical, psychological, social, or economic asymmetries among individuals result in different levels of social power, which lead to asymmetric exchange relationships. Social power can be understood as the sum of the resources-endogenous or exogenous of the consumer (Martin, 1971): Examples of resources endogenous to the individual include cognitive skills, education, vitality, physical strength, wealth, and family and friends, while resource exogenous to the individual is status in society which is often conferred by race, gender, income, and other congenital conditions.

According to the social exchange theory, as adults grow older their social power diminishes due to retirement with its consequent loss of command over productive resources, widowhood, loss of vitality, and reduction in cognitive ability (Dowd, 1975; Martin, 1971). This diminution of social power creates inequitable exchange relationships, which consequently make the elderly more vulnerable to market fraud.

Finally, taxonomical studies have often singled out the elderly as a common target of consumer scams which frequently rely on high pressure face to face selling or telemarketing schemes that by their nature take advantage of cognitive deficiencies, such as slower processing of new information, or physical impairments such as reduced hearing ("Fraudbusters," 1991; Friedman, 1992; Goodman, 1993; Harris, 1995; Hudson, 1993; "Ten Self-defense," 1994). The taxonomical literature has been mostly descriptive in nature and taken an ad-hoc approach, the causal relationship between age and consumer vulnerability can not be established from it.

While the literature on the elderly consumer's vulnerability provides compelling arguments of why they are more susceptible to fraud, limited research has been conducted to empirically examine the extent of the elderly consumers' vulnerability to fraud and deception. This issue is addressed in this study. Consumer's lesser sensitivity to deceptive business practices and a lack of knowledge about the market place have been proposed to predispose them to abusive situation (Lord & Kim, 1995; McGhee, 1983). Therefore, the elderly consumers' awareness of unfair business practices and knowledge of the market place are investigated and compared with that of young consumers' in this study.

It is particularly important to investigate consumer's vulnerability to fraud and deception independently from their self-reported experience of market swindle, since the costs of reporting their victimization experience have been suggested to be high, specifically for the elderly consumers (McGhee, 1983). Since vulnerability is more likely to reflect consumer's susceptibility to fraud than consumer's reported victimization experience, the findings from this study will then provide additional insights for the development of policy and education programs.

Methods

Data

The data for this study are from The 1993 Survey of Consumer Behavior commissioned by The American Association of Retired persons (AARP). The survey used telephone interviews among a national sample of 957 adults age 18 or older. Special sampling techniques were used to ensure that a large number of the oldest consumers would be interviewed. The details of data collection are provided in AARP (1994).

Since the data were purposively collected with an over-sampling of the elderly consumers, half (51.5%) of the subjects were age 65 or older. With regard to gender, male (42%) respondents were outnumbered by female respondents (58%). This is not surprising considering the longer life expectancy of female compared to male and the large number of elderly consumers. Fifty seven percent of respondents were married, while 22 percent were widowed. Regarding race, white were predominant (91%). Fifteen percent of respondents did not finish high school, while 42 percent received at least some college education. Seventy eight percent of respondents owned a house, and more respondents lived in South and Midwest.

Variables

Based on the presumption that consumers' awareness to deceptive practices and lack of knowledge predispose them to fraud and deception (Lord & Kim, 1995; McGhee, 1983), the following variables were employed to indicate consumer vulnerability: openness to appeals from marketers, consumer's awareness of source of information, knowledge of consumer rights and other market knowledge, and wariness of unfair business practices.

Specifically, consumer's openness to appeals from marketers was determined by (1) whether they usually listen to telemarketers who call, (2) whether they believe it is wrong to hang up on a persistent telemarketer, and (3) how often they read mail solicitations and promotions. Consumer's awareness of source of information was examined in terms of (1) whether they can identify a source of information for them to turn to when they want to check about the legitimacy of a charitable organization and (2) whether they can name a source of help when they have consumer problems.

The knowledge of consumer rights was self-reported by the respondents: The respondents were asked to rate their own understanding of consumer rights and the laws that protect consumers in a four-level scale.

TABLE 1.
Comparison of The Elderly Consumers' Vulnerability with The Young Consumers': Percentage of Respondents and Chi-Square Statistics.

	The Elderly		The Young		Chi-Square
	Yes	No	Yes	No	(P-value)
Awareness of source of information					
Identified a source of information about legitimate charities	67	33	65	35	0.6
Identified a source of help with consumer problems	84	16	94	6	24.5*
Openness to appeals from marketers					
Usually listen to telemarketers[1]	20	76	28	66	11.7**
Believe it's wrong to hang up a phone[1]	94	5	91	7	3.0
Usually read mail solicitation	26	74	25	75	0.2
Good knowledge of consumer rights	49	51	49	51	7.3
Knowledge of market practices					
How 1-800 numbers are charged	80	20	92	8	26.3*
How 1-900 numbers are charged	43	57	70	30	68.3*
Difference between a product warranty and a service contract	38	62	27	73	11.9*
Cancellation rule of door-to-door sales	29	71	31	69	0.4
Home can be lost if mortgage payment are missed	66	34	78	22	18.3*
Payment can be deducted automatically from the homeowner's bank	24	76	31	69	5.0
Homeowner can be sued if payment is missed	53	47	68	32	23.3*
Wariness of business practices:					
Business try to mislead consumers at least half the time					
Companies selling over the phone	62	38	74	26	7.7**
Car repair shops	56	44	74	26	16.5*
Home repair contractors	52	48	56	44	0.8
Insurance companies	50	50	66	34	12.2*
Door-to-door sales companies	48	52	71	29	24.6*
Finance companies	45	55	60	40	10.5*
Vitamin/health food stores	45	55	53	47	2.9
Cable TV companies	40	60	47	53	2.4
Appliance/electronic equipment stores	39	61	54	46	2.6
Places selling hearing aids	39	61	31	69	3.3
Telephone companies	33	67	50	50	13.0*
Grocery stores	33	67	38	62	1.1
Banks, credit unions/ savings & loans	32	68	30	70	0.3
Gas stations	27	73	44	56	15.7*
Travel agencies	26	74	37	63	6.6**
Drug stores	26	74	24	76	0.3

*=0.001, **=0.01

Note 1. Some respondents voluntarily answered to these questions by "don't know."

Market knowledge was determined based on their knowledge of (1) the charging procedure for calls to '800" and "900" telephone numbers, (2) the difference between a product warranty and a service contract, (3) legal safeguards regarding purchases from door-to-door sales people, and (4) legal questions relating to delinquent or late payments on home improvement and home equity loans.

Finally, wariness of unfair business practices was measured by the degree of trust they have on a variety of businesses. Specifically, the respondents were asked about how often they believe the following businesses try to mislead or take advantage of consumers; grocery, drug stores, appliances and electronic equipment stores, banks, credit unions and savings and loans institutions, travel agencies, car repair shops, home repair contractors, telephone companies, vitamins and other health products stores, finance companies, door-to-door sales, telemarketing companies, places selling hearing aids, and gas stations. In addition, the respondent's actual experience of consumer fraud was reported. Based on previous experiences in the market place, the respondents were asked whether there was ever a time s/he felt as the subject of a major consumer swindle or fraud.

Results and Discussion

Exposure to Marketing Scams

The scam artists' modes of operation, telemarketing, charitable solicitations, door-to-door sales, prizes and contests, intrude on the lives of most consumers (Table 1). Well over half of all consumers, no matter their age, routinely receive telemarketing calls at home and are offered "prizes." Specifically, over 90 percents of respondents received at least one telemarketing call, while three-quarters were offered prizes during the six month period, and 70 percents received at least one call from someone requesting a charitable contribution. In addition, around 35 percent of the respondents had at least one visit of a door-to-door salesperson, and six percent was visited five or more times. Older and younger consumers were found to be subjects to these appeals to about the same extent.

Openness to Marketing Appeals

For most consumers, direct marketing appeals, including telemarketing and mail solicitation, are no more than a nuisance. A sizable minority however, listens to these appeals, and a smaller, but still significant, group won't hang up on them. Younger consumers (28%) were more likely to listen to telemarketers than older consumers (20%).

Awareness of Source of Information

Although telephone solicitations for charitable contributions are familiar to most of consumers, they cannot always be certain that the charitable organization is legitimate. Sources exist, however, to help consumers learn about the operations of legitimate charitable organizations. Unfortunately, about a third of consumers regardless of age could not name any of these sources.

On the other hand, almost all consumers could name a source they would use when they need help with a consumer problem. But, 16 percent of older consumers could not identify anyone could ask to for help with a consumer problem: This number is much higher than for younger consumers (6%).

Knowledge of Consumer Rights

Overall, nearly half of consumers believed they have a good (41%) or excellent (8%) understanding of consumer rights. An equal number rated themselves as having only fair (42%) or poor (7%) knowledge about the laws meant to protect consumers, regardless of age.

Market Knowledge

The results are mixed for market knowledge, although older consumers were usually less knowledge than younger consumers. Knowledge about how 800 and 900 telephone numbers are charged was high. Knowledge levels are markedly lower for the difference between a product warranty and a service contract and for cancellation rules on products purchased from a door-to-door salesperson. Knowledge about the consequences of delinquent home loans or mortgage payments is moderate to high.

Specifically, knowledge of how "800" and "900" are charged decreased with age. Older consumers were more ignorant of the potential costs of calls to "900" numbers. While 70 percent of the young consumers knew how "900" calls are charged, only 43 percent of the older consumers knew how these charges work.

Over half of all consumers did not know that the important difference between a product warranty and a service contract is that the consumer pays separately for the service contract. Younger consumers were found to be less knowledgeable in this respect than older consumers, which may due to less experience of purchasing household appliance or electronic equipment.

Regarding door-to-door sales, federal law requires that consumers have three days after the purchase is made, or an order is placed, to cancel and receive a full refund. A number of states have their own statutes that may extend the three day time period. Only

30 percent of consumers could correctly state their rights to cancel door-to-door purchases, regardless of age.

Consumers were asked a series of questions relating to the consequences of missing payments on home improvement or home equity loans. Older consumers were found to be less knowledgeable than younger consumers about the risk of being sued and losing ownership if payments were missed, although a majority of consumers were aware of these potential consequences. However, most of both young and old consumers were found to be ignorant of the ability of a creditor to deduct payments from a paycheck.

Wariness of Unfair Business Practices

Sharp differences in consumers' perception of unfair business practices were found among various businesses. In industries like telemarketing, car repair, home repair, insurance, and door-to-door sales, consumers fraud was viewed as pervasive. In others such as drug stores, consumers said they seldom encountered fraud. Younger consumers were found to be more wary than older consumers concerning the existence of deceptive practices in a wide range of businesses, including telemarketing companies, car repair shops, insurance companies, door-to-door sales companies, finance companies, telephone companies, banks, credit union, savings and loan institutions, and travel agencies.

Victimization Experience

With regard to consumer's actual victimization experiences, however, larger number of young consumers (17%) reported that they have had an experience of major consumer fraud or swindle when compared to older consumer (14%). Even though older people have had longer lives as consumers and presumably, more opportunities to become victimized, and more importantly, older consumers were found to be more vulnerable to fraud, major victimizations were reported more often by young consumers than by older consumers. These results support the proposition that the elderly tend to under-report their victimization experience. Furthermore, a significantly large number of the elderly consumers were not sure of whether they have been victims of fraud. This suggests that even higher percentage of the elderly had been a victim of fraud. Consequently, smaller number of older consumers (52%) were sure that they haven't involved in any consumer fraud or market swindle as compared to younger consumers (71%).

Conclusions and Implications

The elderly consumers' vulnerability to fraud and their victimization experiences were compared with their younger counterparts' in this study. Using the 1993 Interview of Consumer Behavior commissioned by the American Association of Retired Persons, it was found that elderly consumers were more susceptible to market fraud and swindles but less likely to report their victimization experience than younger consumers.

Specifically, the elderly were found to be less aware of a source of help with consumer problems, less knowledgeable of the charging procedure of "800" and "900" numbers and the consequence of missed payments of home equity and home improvement loans, and less wary of unfair business practices than their younger counterparts. This lack of knowledge and wariness implies the elderly's high level of susceptibility to deception and fraud.

However, despite their higher vulnerability, the elderly did not report a higher incidence of victimization experience as compared to the young consumers. Furthermore, a large number of the elderly were not sure whether they had experienced major market fraud or swindles. These results are consistent with the previous findings on the elderly's under-reports of fraud (Friedman, 1992; McGhee, 1983): The elderly are not only less likely to recognize that they have been victims of fraud or swindle but also are less likely to report abuse once they have recognized that it existed.

Implications at this point become very clear. Noting the fact that a large number of the elderly voluntarily claimed that they were not sure whether they have been victims of fraud or abuse, there is an unquestionable need for consumer education. The elderly, first, should be educated as to what constitutes market fraud and abuse. Then, if they get hurt by fraud or need to clarify whether they have been the target of unfair business practices, they should be educated regarding where to turn to get help. Agencies in private, government, and non-governmental sectors that serve consumer advocacy must increase their efforts to reach this audience. In encouraging the elderly to report their victimization experience, an inviting atmosphere needs to be provided. Since many of the elderly avoid to be labeled, they are less prone to report their bad experiences.

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Endnotes

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Determinants of Fathers As Primary Child Care Providers in Working Families

A greater percentage of married mothers are in the workforce today than ever before. In spite of that fact fathers were only slightly more likely to be primary child care providers through 1988 than they were 10 years earlier. Why? Why were so few fathers involved in child care when their wife was at her place of employment? This study seeks to answer, if not why, at least what determines the probability that a father *will* be involved. This paper concludes, first, that there was minimal change in the prevalence of fathers as child care providers between 1984 and 1988, and, second, that the two most important factors determining a father's participation as principal child care provider are the number of children in the family and whether the mother works days. Other variables significantly affecting the role of child care by the father are whether the mother works part-time, the level of her income, the age of the father, the mother's attitude toward "traditional" husband/wife roles, ethnicity, and the sex of the child.

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Introduction

A family's options of child care obviously depend heavily on income and access. For many, both income and access to child care are at least partially dependent on public transfers. In order to rationally assess the need for public assistance for child care or family leave, policy makers must fully understand those options. With the increase over the past forty years in labor force participation by mothers in two-parent families, a portion of the knowledge required by policy makers lies in understanding the determinants of fathers as primary child care providers in working families. This study seeks to increase that understanding.

Over the past four decades there has been a dramatic increase in labor force participation rates among mothers in two-parent families. In 1950 only about 12% of married women with a child under age six were in the labor force; by 1985 the figure had more than quadrupled to 50% (O'Connell & Bloom, 1987). As mothers continue to enter or reenter the workforce, three phenomena are occurring. First, employment is extending into evenings and weekends as America becomes more of a 24-hour economy. Second, the need for child care when the mother works is increasing, and third, the pool of female relative care givers is dwindling as these women, too, enter the labor force.

As the percentage of married mothers in the workforce increases, one might expect a corresponding increase in the percentage of husbands who provide primary child care. However, at least through 1988 there was no such concomitant increase. In 1977, in two-parent families 17.1% of fathers of preschoolers were primary care providers (U.S. Department of Commerce, 1987), while in 1988 the figure had only risen to 17.9% (O'Connell & Bachu, 1988).

Previous Research Concerning Fathers as Child Care Providers

While there is a well-established literature on the availability, effects, and quality of child care services in general (e.g., see Clarke-Stewart, Gruber, & Fitzgerald, 1994; Hayes, Palmer, & Zaslow, 1990; Hofferth et al. 1991), only two studies have dealt solely with fathers as principal providers of child care while the mother is at her place of employment. The first was not nationally representative; all mothers were white and middle class and almost all fathers had completed college (Baruch & Barnett, 1981). While the second used a nationally representative sample, the study was descriptive rather than analytical, i.e., it looked only at frequencies of fathers providing child care without considering the effects of other variables (O'Connell, 1993).

Factors cited in previous studies for fathers' involvement in primary child care included a) unavailability of other arrangements, b) costs of nonfamilial care, c) the age of the child, d) the mother's work schedule, and e) the father's employment status and work schedule. Each of the first four variables will be discussed in detail below; but, because in this study *all* mothers are employed, the decision of the family becomes whether the father should seek market employment at all or remain at home and care for the youngest child. In short, this analysis views the father's decision to work as linked to his decision to care for children while his wife is employed. Therefore, endogenous variables related to his employment decision, such as his work schedule and his hourly wage rate, are eliminated from this study. Exogenous variables, such as his age, his education, and the local unemployment rate, related to his employment decision are included. Any variable which increases the likelihood of paternal employment would decrease the probability of paternal involvement in child care.

Unavailability of Other Arrangements

When mothers work during the evening hours, fewer traditional child care options are available. As Presser (1988) pointed out, there are very few night care options, and fathers might assume a greater share of child care responsibility when the mother works nights.

Child Care Costs

The child care cost factor has two elements. First, families who earn lower incomes use a higher percentage of their income for child care. Casper et al. (1994) found that in 1991 women living in poverty devote about 27% of their income to child care costs versus only about 7% for women living above the poverty level.

The second aspect of the cost factor is that the total dollar costs paid to market care providers are higher as the number of children requiring child care increases. O'Connell (1993) found that families with 2 or more children were more likely than those with only 1 child to have the father serve as principal care provider.

Age of the Child

Results of previous studies regarding the effect of the age of the child on the father's participation in a child care role are mixed. Rossi (1984) argued that men distance themselves from caring for infants and may be more willing to participate when the child is older. In contrast, Hofferth et al. (1991) reported that the percentage of fathers who acted as the primary child care provider was actually *inversely related* to the age of the preschooler when the mother was employed (22.5% for children less than 1, 18.4% for children aged 1 or 2, and 12.1% for children aged 3 or 4). The findings of Casper et al. (1994) supported this result.

Mother's Work Schedule

In previous studies one of the most significant factors determining whether the father was the primary child care provider has been the mother's work schedule. O'Connell & Bachu (1988) found that in 1988 fathers of preschoolers were almost three times more likely to be the primary child care provider of preschoolers if the mother worked part-time rather than full-time. Hofferth et al. (1991), Presser (1988), and Moen (1992) also reported similar results. The less time an activity entails, the more easily that activity can fit into the limited number of hours one has available.

Empirical Measures and Models

The Data

This study utilized the National Longitudinal Survey of Labor Market Experience of Youth (NLSY), a multistage probability sample of 12,686 men and women aged 14 to 21 as of January 1, 1979. The sample frame for this study included only employed, married women who were aged 23 to 26 in either 1984 or 1988 and who had at least one preschool child (aged less than 5). Combining the two cohorts achieved two purposes. First, it permitted the testing of whether any significant change had occurred over the 1984-1988 interval, and second, it doubled the size of the sample.

The Variables

As noted, previous research centered on four factors affecting the probability that the father would be the primary child care provider when the mother was at her place of employment: unavailability of other arrangements (predominantly caused by the mother working nondays), child care costs (both the actual costs as a percentage of income and the number of children requiring care), age of the youngest child, and the work schedule of the mother (full-time versus part-time).

Unavailability of other arrangements. This analysis proxied the availability of other child care arrangements by whether the mother worked days or nights. As previous studies suggested, "night care" for children is limited; therefore, this analysis hypothesized that if the mother worked a day shift, the probability of child care by the father would be lower.

Child care costs. Since the NLSY data do not contain individual expenditures on child care costs, the assumption is made that those costs are constant per child, and the effects of those costs are different depending on income and the number of children in the family. The mothers were separated into two groups by median earned income, one group earned greater than the median and one earned less. The incomes of the 1988 subsample were deflated to 1984 levels by use of the CPI. This study hypothesized that if the mother's earned income was above the median, the father would be less likely to provide primary child care under the assumption that market care of children is a normal good, i.e., that as a mother's income increases she will purchase more market care for the child.

The hypothesis adopted for this study was that as the number of children increased, so too would the probability of child care by the father. This hypothesis was posited for two reasons. First, it was predicted that as costs of child care increased, i.e., by increasing the number of children requiring care, the family would use less market care and more father care. Second, there are economies of scale extant when the father tends numerous children. His potential lost wages per hour remain constant, but the savings are multiplicative as the number of children increases.

Age of youngest child. The effect of age of the youngest child on the probability of child care by father was hypothesized to be negative. This hypothesis was adopted because of the strong findings of Hofferth et al. (1991) and O'Connell et al. (1994). Both of those studies presented results which indicated that the percentage of fathers acting as primary child care provider was inversely related to the age of the youngest child.

Mother's work schedule. In keeping with the findings of Hofferth et al (1991), O'Connell (1993) and O'Connell & Bachu (1988), this analysis hypothesized a positive effect on the probability of child care by the father if the mother worked part-time. The fewer the hours of child care required of the father, the more able he is to participate.

Other influential variables. This analysis also used a number of other variables thought to influence the probability of child care by the father. One binary variable, mother's attitude toward gender roles, was used to proxy the mother's attitude toward traditional husband/wife roles within the family ("traditional" connoting that the husband is the bread winner and the wife takes care of the home and children). The effect of a positive attitude toward traditional husband/wife roles on the probability of child care by father was hypothesized to be negative. The more the mother adopts total responsibility for a child, the less likely will be the father to participate. None of the previous studies considered the effects of this qualitative variable.

Other variables included in this analysis were rural/urban residence, local unemployment rates, sex of the child, presence of another adult in the household, age of the father, education of the mother, education of the father, the number of weeks worked during the previous six years by the mother (mother's market work experience), and a variable to determine whether there was any difference between the respondent group from 1984 and that from 1988. Potential effects caused by cultural differences were tested by including black and Hispanic as binary variables[2].

Empirical Model and Procedures

The outcome variable, **child care by father**, in this analysis was the probability that a woman, drawn at random from the sample, listed her spouse as the primary child care provider of her youngest child when she was at her place of employment. The predictor variables were those discussed in the previous section.

Because the response variable used in this analysis, child care by father, was dichotomous, a binomial logit estimation procedure was used. In the model, X_i represented the vector of predictor variables for the ith respondent, where I = 1, 2, ... 583. Further, π_i represented the conditional probability that the spouse of the *ith* respondent was the primary child care provider, and $1-\pi_i$ the conditional probability that the spouse was not, given the X_is. Then the logistic regression model for the log odds of child care by the father was

$$\log(\pi_i/1-\pi_i) = \log O_i = \alpha + (X_i)\beta_j,$$

where β_j represented the vector of logit parameters and O_i was simply the conditional odds of child care by the father given the explanatory variables (Aldrich & Nelson, 1984). The parameter estimates of the logit are presented in Table 1 along with the marginal effects of each variable.

Results and Discussion

The combined unweighted sample included 583 married, employed females who were mothers of at least one preschooler. For the weighted sample, 18.36% of the fathers acted as primary child care providers when the mother was at her place of employment. Using the model set forth above, and at a 5% level of significance, 7 of the 18 variables in the model were significant (Table 1). Due to space restrictions the text will contain a discussion of only those variables found to be significant in either previous literature or in this study. Also, the marginal effects of the variables are shown in Table 1 and will not be discussed in the text.

Unavailability of Other Arrangements

Whether the mother worked days versus nights proved to be highly significant (α=.01) and had a negative impact on the probability of child care by father. The sign and the significance of the mother working days is in line with most previous studies, and speaks to the absence of "night care" in the formal child care market.

TABLE 1
Results of the Logit Analysis

Variable	Marginal Effect	Pr > Chi-Square	Odds Ratio
Intercept	-------	0.8104	1.532
UNAVAILABILITY OF OTHER ARRANGEMENTS			
Mother Works Days	-0.24443	0.0001***	0.195
CHILD CARE COSTS			
Below Median Income	0.13187	0.0367**	1.851
Number of Children	0.13949	0.0003***	1.847
Nonwage Income	0.000002	0.7776	1.000
AGE OF YOUNGEST CHILD			
Age of Youngest Child	0.02433	0.2348	1.117
MOTHER'S WORK SCHEDULE			
Mother Works Part-time	0.13658	0.0285**	1.768
OTHER VARIABLES			
Mother's Attitude Toward Gender Roles	-0.12196	0.0951*	0.526
Hispanic	-0.1997	0.0092***	0.307
Black	-0.0295	0.6354	0.855
Urban	0.09409	0.2124	1.471
Local Unemployment Rate	0.03387	0.2354	1.161
Male Child	-0.11103	0.0278**	0.581
Other Adult in Household	-0.087149	0.1876	0.658
Father's Age	-0.01793	0.0365**	0.925
Mother's Education	-0.024335	0.2862	0.900
Father's Education	0.008776	0.6592	1.035
Mother's Market Work Experience	-0.00035	0.9165	1.000
1988 Subsample	0.015715	0.9383	1.021

X^2 99.334 (degrees of freedom = 18) (p=.0001)

Unweighted Number of Observations = 583

* Significant at α = .10. ** Significant at α = .05. *** Significant at α = .01.

Child Care Costs

The effect of the mother's income being below the median was significant (α=.05) and increased the probability that the father would be the primary child care provider. This supports the results of previous studies and the hypothesis that market care is a normal good and will increase as the mother's income increases (thereby decreasing the likelihood of child care by fathers). The number of children in the household proved to be highly significant (α=.01), and, as hypothesized, had a positive effect on the probability of child care by the father.

Age of the Youngest Child

Age of the youngest child proved to be an insignificant predictor of fathers' participation as primary child care provider. It also provided a sign inconsistent with the findings of Hofferth et al. (1991) and O'Connell et al. (1994). The positive sign tends to support the argument posed by Rossi (1984) that men tend to distance themselves from caring for infants and may be more willing to participate as the child ages, but, due to the lack of significance, the impact of this variable remains problematic.

Mother's Work Schedule

In keeping with much of the previous research, whether the mother worked part-time was significant (α=.05) and positively related to the probability of child care by father.

Other Influential Variables

Whether the respondent was Hispanic proved to have a significant (α=.01) and negative effect on the probability of child care by father. Presser (1988) asserted that those who are Hispanic may be less willing to care for their children during their "available" time than their counterparts. O'Connell and Bachu (1988), too, found that in 1988 preschool children of Hispanics were less likely (11.4% versus 15.5%) to have their fathers as primary providers. In the current study, looking at the weighted sample and ignoring the effects of other variables, non-Hispanic fathers were more than twice as likely to be the primary care providers as were Hispanics (18.98% to 8.85%).

Another significant finding from this study was the effect of the sex of the child on child care by the father. If the child was male the father was *less* likely to be the primary care provider (α=.05). This result is opposite that of Barnett and Baruch (1987) who found fathers' participation in child care tasks was more likely with male children than with female. Whether the current finding suggests that fathers are more concerned about the safety of preschool daughters than about nurturing the masculinity of preschool sons, or whether fathers distance themselves from sons until their sons are able to interact in a more masculine manner is an issue for further study.

The age of the husband/father was also found to have a significant influence on whether the father provided primary child care (α=.05). Whether this is due to an age-based imbalance in the bargaining position between older husbands and younger wives (recall that all mothers are between the ages of 23 and 26), or because younger males are less attached to the labor force and have lower potential wages is problematic.

The attitude of the mother toward traditional husband/wife roles had the expected effect, i.e., the more traditional the mother's views, the less likely the father was to be the primary child care provider. However, the variable was significant only at the 10% level.

Conclusions and Implications

This preliminary multivariate analysis presents the factors which shape the likelihood that a father will be the primary child care provider for his youngest preschool child. Three variables had a significant and positive impact on that probability. Both a greater number of children in the family and the mother's part-time as opposed to full-time employment increased the likelihood that the father would be the primary care provider. Also, if the mother's earned income was below the median, the father was more likely to be involved in child care.

Four variables significantly reduced the probability of child care by father. First is the decreased probability of paternal involvement if the child requiring care is male. This contradicts both the hypothesis and the findings of previous research. Not only is the effect in contrast to the hypothesis and the findings of prior studies, but it is statistically significant. Also, if the mother is Hispanic or works days the probability of child care by father is significantly reduced. It is also reduced as the age of the father increases. Also significant but at a lower level (α=.10), the more "traditional" the attitude of the mother toward husband/wife roles, the lower is the probability of child care by the father.

The first conclusion to be drawn from this analysis is that the factors which affect the likelihood that a father will be the primary child care provider for his preschool child are many and diverse: incorporating economic, demographic, cultural, and attitudinal elements. The second is that the two factors most affecting child care by the father are the number of children in the family and the mother's employment status (days versus nights and full-time versus part-time).

The results presented here may or may not be generalizable for mothers/wives younger than 23 or older than 26. Also, the results does not provide insight into whether "dad care" is better than "day care," or whether there is a difference in the *quality* of care given by fathers, say, between daytime hours and nighttime hours.

Future research would be enhanced by expanding the sample frame to include mothers of all ages, by using data from more recent surveys, and by having data on the cost of market provided child care. Data on the *husband's* views of "traditional" husband/wife roles and on the extent of care provided by the fathers, i.e., whether the father is reading to and nurturing the child or simply "at home" while the child sleeps, would also expand insights into the phenomenon of "dadcare".

Acknowledgments

Special thanks goes to Elizabeth Peters for inspiration in the ideation and assistance in the completion of this paper. I am also indebted to Ramona Heck, Nandinee Kutty, Shelly Ver Ploeg, and four anonymous reviewers for comments on previous drafts. Any shortcomings of the study which remain are solely those of the author.

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Endnotes

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2. A complete description of all variables can be obtained by contacting the author.

Effects and Implications of Employment History on Housing Tenure Status

Employment history was introduced as a new independent variable in a logistic regression model of housing tenure. The results indicate that as the number of different full-time positions held by young adults between the ages of 18 and 34 increase, the predicted probability of home ownership decreases. This study is useful for employers seeking ways to reward employee loyalty by developing incentive programs specifically designed to encourage savings for the purpose of purchasing a home.

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Home ownership is regarded as a strong cultural and family norm in the United States. Morris and Winter (1978) identified tenure as one of five norms indicative of housing satisfaction in families, with ownership being the preferred form of tenure in the United States. Home ownership also denotes an individual's status and prestige in the community as well as a willingness to accept responsibility (Perch, Lindamood, and Hanna, 1979). Further, owning a home serves as a source of savings for families through the accumulation of equity, as well as through the allowance of mortgage interest and real estate tax deductions from annual gross income (Hohm, 1983).

Recent economic trends have altered conditions in the labor market; and changing social trends have influenced the behavior of young people as they enter adulthood. The goals of young adults have shifted from marriage and procreation to extensive human capital development and career advancement. Young adults between the ages of 18 and 34 are changing jobs more frequently, in search of a variety of experiences and higher wages. Holding multiple jobs has also become necessary as young adults attempt to relieve debt accumulated during their years of education (Ratan, 1993).

The primary goal of this research is to provide a better understanding of employment behavior and demographic characteristics of young adults in the 1980s; and how these factors are affecting their housing choices. Employers seeking new ways to reward employee loyalty, reduce turnover, and provide benefits may consider developing incentive programs that encourage employee savings for the purpose of purchasing a home.

Literature Review

Economic Trends

The economic prosperity following World War II provided young workers in the 1950s and 1960s with higher wages and lower interest rates (Levy, 1991). Over 60% of all families in 1960 owned their own home (Coontz, 1992). The United States economy has been in transition since the close of World War II. Services have replaced manufacturing as the largest segment of the United States economy (Fuchs, 1968). In 1993, the service sector accounted for nearly 70% of the total market. The rapid growth of the service sector has altered the climate of the labor market; infusing a large number of part-time and contingent positions into the market. The majority of these positions offer lower wages, fewer benefits, and less stability than traditional manufacturing jobs (Robinson, 1993). The increase of jobs in the service sector played a major role in the decline of wages in the 1980s. Young adults faced a major decline in median family income, real wages, and net wealth. (Mishel, 1993).

The 1980s brought the first decade-long decline in home ownership since the 1930s. The US Census Bureau reported that contributing factors to this decline included an increase in non-family households (one-person households or non-relatives maintaining households), a decrease in home ownership rates of families, and a decline of home ownership rates of adults under the age of 60 (US Bureau of the Census, 1990).

Previous Studies of Housing Tenure

Although there has been extensive research in the area of housing tenure, no previous studies were found (to the best of the author's knowledge) that included employment history as an indicator of housing

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tenure. Income, family size, age of household head, and race of head are the variables most typically found to be determinants of home ownership (Li, 1977).

Tenure transition models indicate that there is an optimal point in time when the transition between renting and purchasing a home is most favorable. Transition models suggest that households develop a sense of permanence as the members pass through a series of life cycle milestones. Examples of such milestones are the completion of education and the establishment of a career, marriage or the development of other strong interpersonal relationships between household members, an increasing desire to own a home, and decreased uncertainty of permanent income. Households with limited income or human capital development may have difficulty reaching an optimal tenure transition point (Jones, 1989).

Young adults' expectations of future home ownership were found to be significant in a 1983 study of college students (Hohm, 1983). Hohm found that students who expected to have five or more children, or whose parents owned a home were more likely to want to own their own single-family home in the future.

The changing economic and social trends over the past four decades enable researchers to predict the general conditions young adults will face into the next century. However, new research is needed to analyze the emerging effects of these trends. The purpose of this study is to determine if the frequency at which young adults change jobs negatively effects their likelihood of owning a home. This study introduces employment characteristics in a model of housing tenure in order to capture the effects of changing labor market conditions on housing consumption of persons between the ages of 18 and 34.

Methodology

Modeling the Tenure Decision

The theoretical modeling of the tenure decision suggests that a household will elect to own if the utility from home purchase is greater than from renting. Tenure transition models further recognize that the vast majority of households initially rent and wait for the optimal time of tenure transition to occur (Jones, 1989). The factors determining the length of this waiting time will depend upon, among other things, initial non-human wealth, human capital, and transition costs (Jones, 1989). Households with little initial non-human wealth and high transition costs may reach the tenure transition point later than their counterpart.

Conventionally, tenure choice decision is estimated by a logit model:

$$P\,(own) = p\,(Y, Z) \qquad (1)$$

where the likelihood of a household owning (P(*own*)) is a function of income and a Z-vector of household attributes. Household-specific transactions costs and tastes are embodied in the household characteristics included in the Z-vector. This study adopts the logit model for the analysis of ownership status. The estimation in this study focuses on households' observed choices between rent-or-own alternatives.

Method of Analysis

A logistic regression analysis is used to determine factors affecting the likelihood of owning a house. Logit is the appropriate method to investigate what variables are related to a binary dependent variable (Maddala, 1992, pp. 327). The coefficient estimates can be further used to calculate predicted probabilities for any combination of values of the independent variables (Maddala, 1992, pp.334).

Data

This study utilized data from the third wave of the Survey of Consumer Finance (SCF), conducted in 1989 (ICPSR release, February 1993). Included in the data are economic assets and liabilities of households, composition of household budgets, employment history of the respondent and spouse/partner, as well as attitudes toward consumer credit issues and their relationship with financial institutions. The 1989 SCF sample was drawn from a dual-frame; standard multistage area-probability acquired 2,277 households from the 48 contiguous United States. A high-income sample of 866 households was also selected using tax data. A multiple imputation techniques was used to create the 1989 data file, which included five sets of data. This study used the first data set for the empirical analysis.

Sample

In this study, a sub-sample of 438 households were chosen for the empirical analysis; included in the sub-sample were respondents between the ages of 18 and 34 employed either full or part-time at the time of the survey. Sixty-eight respondents who reported being unemployed at the time of the sample were omitted from this analysis. The 1989 SCF defines the respondent as "the most knowledgeable" about the household's financial affairs, or the family member who is the most "economically dominant"; for example, serving as the primary wage earner or homeowner (Kennickel, 1989).

Measurement of Variables

The dependent variable used in this study is the current tenure status of the respondent's primary dwelling. Housing tenure (TENURE) is defined as a dichotomous variable; equal to 0 if the respondent owns the primary dwelling and equal to 1 if the respondent rents the primary dwelling. The 1989 SCF reports the ownership status of the respondent in six categories: 1) the respondent owns, 2) the respondent rents, 3) the respondent owns a condominium, 4) the respondent owns as part of a cooperative, 5) the respondent owns a townhouse or apartment, and 6) the respondent neither owns nor rents the primary dwelling. All categories indicating ownership were combined to form one categorical variable indicating ownership. The category of rent was unchanged. The inappropriate category containing 39 respondents who neither owned nor rented their primary dwelling was omitted from the analysis.

Table 1.
Independent Variables

Variable	Code
Age of respondent (continuous)	AGE_R
Race of respondent (dummy)	NONWHITE
Marital status (dummy)	SINGLE
Household size of respondent (continuous)	HHSIZE
Years of education of respondent (continuous)	EDU
Employment history of respondent (continuous)	HISTORY
Employment status of respondent (continuous)	WKINDEX
Household gross income obtained from all sources in 1988 (continuous)	INCOME88
Household financial assets (continuous)	ASSETS
Squared term of financial assets (continuous)	ASSETSQ

Independent Variables

Table 1 contains a listing of the independent variables included in the model and their respective codes. Detailed descriptions of the categorical variables as well as the variables measuring employment history, employment status, and financial assets follow the table.

Race of Respondent. The 1989 SCF classifies respondent race into four categories: White, Black, Hispanic, and Other. The three latter categories were combined to form one classification, NONWHITE, which was used in the model. This category represented less than 25% of the total sample; over 75% of the sample reported being White. White respondents formed the reference category for this variable.

Marital Status. Marital status of the respondent was reported in six categories in the 1989 SCF: married, living with partner, separated, divorced, widowed, and never married. Respondents who reported being married or currently living with a partner were combined to form the reference category for this variable. All other respondents who reported being single, separated, widowed, or divorced at the time of the survey were combined to form the variable, SINGLE. This category contained about 35% of the sample.

Employment Characteristics. The 1989 SCF questioned respondents about their employment history based on their employment status at the time of the survey. First, respondents were asked if they were currently working full-time for pay, part-time for pay, or not currently working for pay. Respondents were then asked to answer the questions in the section that described their current employment status. The questions were divided into three sections: those currently working full-time for pay, those currently working part-time for pay, and those respondents who were not currently working for pay. This study examined the responses of those currently working for pay; respondents indicating that they were not working for pay at the time of the survey were omitted.

Identical questions relating to employment history were asked in both the full and the part-time section. In each respective category, respondents were asked to report the total number of different employers for which they worked in full-time positions lasting one or more years since the age of 18. Responses to the identical questions in both the full and part-time sections were combined to create the variable, HISTORY, indicating the number of different employers for whom each respondent in the sample has worked at full-time status for at least one year. Respondents were also asked to recall the status[2] (full- or part-time) at which they were employed for all or most of the year since the age of eighteen. If currently working full-time at the time of the survey, respondents were asked to report the actual number of years they had spent working in any full-time position for all or most of the year. In a separate question, respondents reported the actual number of years spent working in part-time positions for all or most of the year. Responses were totaled across each category yielding the total number of years employed in full-time and part-time positions, respectively, since the age of 18.

The status variable, WKINDEX, is a ratio of employment status and age. A value of 1 was assigned to each year the respondent was employed at full-time status; a value of 0.5 was applied to each year the respondent had worked part-time. Therefore, in this analysis, one year of part-time work is equivalent to one-half year of full-time work. The sum of the two variables equals the total number of years the respondent has been employed at full-time status. This value is divided by the age of the respondent, less 16 to determine the number of years the respondent is beyond the age of 18.

$$\text{WKINDEX} = \frac{[(\text{yearsft})+(\text{yearspt} \times 0.05)]}{(\text{AGE\_R} - 16)} \qquad (2)$$

where: YEARSFT = the number of years respondent has worked full-time all or most of the year since the age of 18.

YEARSPT = the number of years respondent has worked part-time for all or most of the year since the age of 18.

AGE_R = actual age of respondent

Financial Assets. The variable, ASSETS, was created by adding the actual amount of the assets held in selected financial vehicles of both the respondent and his/her spouse. The following accounts were chosen for this analysis: main checking account, individual retirement or Keogh account, money market funds, certificates of deposit, passbook savings, mutual fund, government and corporate bonds/bills, and publicly traded stock. The values reported in each of the accounts listed were mutually exclusive. Pensions or retirement savings held in mutual funds were not included in mutual fund amounts. Home equity was not included. The squared term of the ASSETS variable was also included in the model to measure a possible curvilinear relationship between assets and the probability of owning a home.

Results and Discussion

Demographic Characteristics

Over forty-four percent of the sample owned their home at the time of the survey. In this study, eighty percent of respondents were male; one-half of all respondents were at least 30 years of age. Home ownership rates increased with age. There were no homeowners under the age of 22, while fifty percent of respondents over the age of 30 owned a home. Overall, the ratio of renters to owners in the sample was consistently about 5 to 1.

Sixty-five percent of the sample were married or living with a partner at the time of the survey. The number of years of formal education received by the respondents in this study ranged from 2 to 17 years. Ninety-two percent of respondents reported being employed full-time. The work index variable indicated that on average, the respondents in this study worked at 71% of full-time status for all or most of their working years since the age of 18. The number of different employers with whom respondents were employed at full-time status for one or more years ranged from 0 (not yet worked a year in a full-time position) to 15 different employers. On average, the young adults in this study had worked full-time for at least a year for 2.6 different employers since the age of 18. The median household income reported in this study was $26,000; median assets held in financial accounts was $2,000. Table 2 contains mean values and standard deviations of the continuous variables used in the model

Table 2
Descriptive Results of the Independent Variables

Variable	Mean	Standard Deviation
AGE_R (years)	29	3.9
HHSIZE (members)	3	1.7
EDU (years)	13.5	2.5
HISTORY (# of jobs)	2.7	1.9
WKINDEX (% full-time)	.70	0.19
INCOME88 (dollars)	64,605	190,394
ASSETS (dollars)	36,770	157,865

Logistic Regression Results

Six of the ten independent variables included in the model were significant ($p<0.05$) factors in describing housing tenure status. Table 3 contains the coefficients of the independent variables included in the model.

The goodness of fit of the model was calculated through a set of formulas used to compute the pseudo R-squared for a logistic regression analysis (Maddala, 1992, p.334). The pseudo R-squared indicates that 43.89% of the variation of the dependent variable, housing tenure status (TCHOICE), was explained by the independent variables included in the model.

The variables indicating the respondent's race, level of education, and work index value were not significant in this analysis. The remaining variables indicating the respondent's age, marital status (single), household size, gross household income, and financial assets; respectively, were each significant ($p<0.05$), controlling for all other variables. The negative parameter coefficient found in the marital status variable suggests that respondents who were not categorized as being married are less likely to own a home than the married /cohabiting respondents in this analysis. The predicted probability of home ownership for a single respondent was 35%. The young adults in this study who were not married were nearly 15% less likely to own a home than those respondents who were married/cohabiting.

Table 3
Analysis of Maximum Likelihood Estimates.

Variable	DF	Coeff.	S.E.	$p>X^2$
INTERCEPT	1	-6.34	1.30	0.0001
AGE_R	**1**	**0.13**	**0.04**	**0.0009**
NONWHITE	1	-0.08	0.30	0.7673
SINGLE	**1**	**-0.60**	**0.30**	**0.0473**
HHSIZE	**1**	**0.37**	**0.10**	**0.0003**
EDU	1	0.03	0.05	0.4997
HISTORY	1	-0.12	0.06	0.0612
WKINDEX	1	0.57	0.78	0.4588
INCOME88	**1**	**9.41E-05**	**2.89E-05**	**0.0011**
ASSETS	**1**	**0.000051**	**0.00001**	**0.0001**
ASSETSQ	**1**	**-3.59E-10**	**8.55E-11**	**0.0001**

The variables measuring employment status (WKINDEX) and employment history (HISTORY) were not significant the standard 95% confidence level. The HISTORY variable was negatively related to the probability of home ownership. It was not significant at a strict 95% confidence level; however, due to the narrow margin (1%), this variable should be investigated further in future research to determine if employment history is negatively related to the likelihood of owning a home.

When controlling for all other variables, the age of the respondent, household size, and income were each positively related to housing tenure. As the respondent ages by one year, the predicted probability of owning a home increases 3%; as the respondent's household size increases by one member, the predicted probability of owning a home increases 9%; and as income increases by $10,000, the predicted probability of owning a home increases 2%. The positive relationships of these variables in this study are consistent with previous studies of housing tenure status where income, family size, and age of head are found to be primary determinants of home ownership (Li, 1977).

In this analysis, financial assets have a positive coefficient; the squared term of financial assets has a negative coefficient, indicating that financial assets exhibit a curvilinear relationship with housing tenure. Initially, as finical assets increase, the likelihood of owning a home also increases but will begin to decrease as assets increase past a certain point. The maximum assets reported by a respondent was over 1.5 million dollars; the second highest was $100,000. In this analysis, financial assets and home ownership were positively related until assets reached $100,000. The probability of owning a home dropped sharply after $100,000 in assets were accumulated. The predicted probability of owning a home for those respondents with the mean value of assets in this study was 44%. For those respondents who had less than $2000 of financial assets (median value = $1967), the predicted probability of home ownership ranged from 11.4% (no financial assets reported) to 12.5% ($2000 in assets).

Conclusion

This study examined the employment history characteristics of 438 young adults between the ages of 18 and 34 to determine if employment status and the number of employers have a negative effect on the probability of owning a home. The results of this analysis are consistent with previous models of housing tenure, based on demographic characteristics of respondent age, income, and family size. Gender and education level of respondent did not exhibit significant relationships with housing tenure in this model.

This study introduced employment history and employment status as new independent variables in a model of housing tenure. However, employment status of the respondent did not have a significant effect in determining housing tenure in this model. Employment history of the respondent showed a tendency toward a negative relationship with housing tenure but was not strong enough to be considered as a significant variable in this analysis.

This study was designed to examine demographic, financial, and employment data of young adults in the 1980s. The findings indicate that income and financial assets had the greatest effect on the likelihood of the young adults in this sample of owning a home. Therefore, educating young adults in the areas of basic personal finance and financial planning may influence their desire to save so that they may purchase a home. Employers can also facilitate the development of this saving behavior in young employees by developing incentive programs that encourage employee loyalty as well as savings for the purpose of buying their first home

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Endnotes

1. M.S. Graduate Student, Department of Consumer and Family Economics, 239 Stanley Hall, Columbia, MO 65211.
2. Employment status was self-reported in the 1989 SCF as either full-time or part-time status. The actual number of hours worked per week are unknown and the SCF makes no assumption about the minimum hours of full-time status.

Consumer Interests Annual *Volume 42, 1996*

Parental Marital History and Child Measured Cognitive Development

This study uses the Peabody Individual Achievement Test scores of children from the 1990 National Longitudinal Survey to test how parental marital status affects the measured cognitive development of children. Results show that children of separated and never married mothers scored lower, but not after controls for income were included. A change in the mother's marital status did not significantly decrease the child's test scores. Few differences were found between those whose mothers were always single, and those whose mothers were always married.

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Introduction

Nearly half of all children born today can expect to spend some time in single-parent homes (McLanahan & Sandefur, 1994). Previous research has established that adult children of single-parent families attain less education than children from two-parent families. Less is known about how parental marital history affects *child* outcomes. The objectives of this study are to compare measured cognitive development of children by the marital histories of the children's parents through the use of the Peabody Individual Achievement Test for Math, Reading Recognition, and Reading Comprehension. The first objective explores how the current marital status of a parent affects measured cognitive development. The second explores how family income may influence measured cognitive development. The final objective attempts to isolate how stress caused by marital status changes may deter a child's measured cognitive development[2].

Literature Review

Much of the empirical literature examining the effects of single-parenthood on children has focused on the educational outcomes of these children as adults. Past studies have linked single-motherhood to lower educational attainment for children, both in terms of years of schooling completed and in high school drop-out rates (Astone & McLanahan, 1991; Beller & Chung, 1992; Duncan, Featherman, & Duncan, 1972; Hill, Duncan, Augustyniak, & Ponza, 1986; Krein & Beller, 1988; McLanahan, 1985; Shaw, 1982).

One theory argues that these results are a function of lower incomes of one-parent families (Rainwater and Yancey, 1967. Income constrains the amount of goods and services a parent can purchase to aid in the development of the child, such as computers, toys, or college tuition. Several studies have found that income can account for a significant portion of the lower educational attainment of children from single-parent families. Hill et al. (1986) found this to be true for white sons and daughters, but not for black sons and daughters. McLanahan (1985) found that a $10,000 reduction in income decreased the probability of single-parent children being enrolled in school at age seventeen by 17%. Similar results were found for white daughters living in single-parent households by Shaw (1982). Finally, Beller and Chung (1992) found that income could explain some of the differences in years of completed schooling of children who had lived in a single-parent family.

These results are robust for child cognitive development measurements as well. Hill and O'Neill (1994) found that children whose mother had never married or who had ever separated or divorced did significantly worse on the PPVT assessment. However, when income was considered, these effects were no longer significant.

Besides being constrained by income, single parents are also constrained by time. Parental interaction stimulates a child's cognitive development. All else equal, one parent has less time available than two parents.

The employment statuses of a child's parents affects both the amount of resources and the time available to invest in the child. Hill and O'Neill (1994) have explored this trade-off in relation to the child's achievement, finding that without controlling for income, a mother's employment was positively related to the child's achievement. Controlling for income yielded a negative and significant effect for the mother's employment status. The authors argued that the first result indicates that earnings from work contributed to the financial well-being of the family. The second result implies that time at work is time not spent with the child, which offsets the positive effect of more income.

A second theory addressing lower educational attainments of single-parent children is the stress theory, which postulates that stress from a marital disruption negatively affects a child's well-being. A study examining parenting practices before and after a marital disruption indicated that parents spent less time monitoring schoolwork, supervising, and communicating with the child (Astone & McLanahan, 1991). Hetherington, Cox & Cox (1978) found that parent-child relations were most stressed one year after divorce, but later stabilized.

The above literature review has focused on differences between single-parent and two-parent families. There are, however, many types of single-parents. Income and stress levels may vary by marital status type and may change when marital status changes. Some studies have taken these factors into account. McLanahan (1985) found that white children living with a separated parent were less likely to graduate from high school than children living with either a married, divorced, or widowed mother. For blacks, only children of widowed parents were significantly less likely to graduate. Measuring years of education attained, Beller & Chung (1992) found that children of separated parents completed the fewest years of schooling, followed by children whose parents never married and those whose parents divorced. The same study found that children of never married parents were least likely to complete high school. Finally, only children with divorced parents were significantly less likely to enter college after high school graduation.

What remains unresolved in the literature is how *child* outcomes vary by single-parent marital status, and may be influenced by marital status changes. This study will explore these issues, first, by determining how current marital status affects achievement, second, by relating past marital history to achievement, and finally, by comparing achievement of children whose parents have always been single, to those whose parents have always been married. The following section describes the empirical models and measures that are used.

Empirical Models and Measures

The child outcomes of interest are the standardized scores on three parts of the Peabody Individual Achievement Test (PIAT); Math, Reading Recognition, and Reading Comprehension[3]. Weighted least squares regression is used. The unit of analysis is the child. Each regression includes a measure of the past or current marital status of the child's mother, as well as other measures of the child's background and socio-economic status.

Data for the analysis come from the National Longitudinal Survey of Youth - Mother/Child file. The mothers of the children were first interviewed in 1979 when they were between the ages of 14 and 21[4]. Follow-up surveys to the 1979 sample of 12,686 have been given each year. Beginning in 1986 and every other year since, the children of these mothers took the PIAT tests. This study utilized the 1990 interviews. In 1990, 5,803 children of the female respondents were interviewed. The NLSY oversampled blacks, Hispanics, and economically disadvantaged whites.

The sample for the analysis includes only those children over the age of five who lived with their mothers in the survey year[5]. Children of widows are also excluded. The final sample for the PIAT Math and Reading Recognition tests uses 2388 observations. The sample size for the Reading Comprehension test is 1694.

Each model regresses one of the three test scores on the four different marital status variables, income and poverty measures, and other background controls. Because of their shared experience as minorities in the United States, estimates for blacks and Hispanics will be separate from whites.

The first two models use dummy variables for the current marital status of the child's parent; divorced, separated, or never married. The first model excludes total family income and poverty status. These variables are then included in the second model.

The third model uses a dummy variable for whether or not the marital status of the child's mother has ever changed since the birth of the child. In this model, the type of change is not specified. It is expected that marital status changes cause instability in the lives of family members, and, therefore, are detrimental to the child's achievement.

The fourth model includes a measure of the number of marital status changes that the mother has experienced since the birth of her child. Those never experiencing a marital status change are coded as zero. It is expected that more marital changes create more instability and hence, lower achievement for the child.

The final model uses a subsample of the full sample. This subsample excludes all children whose mothers have *never* experienced a marital status change. A dummy variable for single-parent marital status is then included[6]. Those whose mothers have always been married are the reference group. Because no one in the sample has experienced a marital status change, any negative effects of single-parenthood must be attributed to something other than the change in marital status.

A set of background variables is included in each model. These include the sex of the child, the age of the child, the age of the mother, the number of adults in the household, the number of children in the household, the highest grade of schooling completed by the mother, the number of years since the last marital status change, and the average number of hours the mother works per week, which is included as a proxy for the mother's available time. This proxy is expected to be negatively associated with the child's test scores. It is expected that the more children there are in a household, the less attention each receives. The mother's attained schooling is expected to be positively associated with the child's scores. Family income is expected to be positively associated with the child's development. Poverty status is expected to have a negative relationship.

Estimation Results

Results for each of the five estimations are presented in Table 1. Because the variables of primary interest are the marital status and income variables, only coefficients for those variables will be reported. Other variables will be discussed, but are not reported.

The first model tests the hypothesis that children from single-parent families perform worse on tests that measure cognitive development than children from two-parent families. Within the group of single-parents, it was hypothesized that the children whose mothers were never married or separated would do worse than those who were divorced. Little support for this hypothesis was found for white children. Only those whose mothers were currently separated did significantly worse than the reference group of married, and only on the Math test. The signs for the never married dummies were negative but insignificant. The signs for the divorced group were positive but insignificant. The hypothesis is supported in the sample of minority children. Those whose mothers were currently separated or never married did significantly worse than those whose mothers were married. Children from divorced families did worse, but not significantly.

Other variables had signs as hypothesized. The education level of the mother was significant and positive for all tests. Test scores significantly decreased as the number of children in the household increased. For white children who took the two reading assessments, the number of adults in the household was positively association with the test scores. Females in the sample scored significantly better than males for all reading tests. The age of the child was negatively associated with all the test scores of minority children. The age of the mother was significantly and negatively associated with the math scores of the minority sample.

The second model included a variable for family income and a dummy for whether or not the family's income was below the poverty level. Results show that income has a significant impact on these scores, and that negative effects of separated and never married marital statuses were no longer significant for minority children, when income was controlled. For white children, the negative effect of having a separated mother still exists beyond income differences. However, there is a significantly positive association between having a currently divorced mother and the Reading Recognition scores of white children, once income is controlled. This result is surprising and somewhat difficult to interpret. Having a divorced mother may be quite different from having a separated mother. This may be because separation is less stable in terms of legal settlements and living arrangements.

Total family income is positive and significant for all tests for minority children. It is also positive and significant for the Reading Recognition scores of white children. Poverty status, as expected, has a significantly negative effect upon the Math and Reading Recognition scores of the minority sample, as well as the two reading test scores of the white sample. Controlling for income, it was expected that the number of hours the mother worked would pick up the negative effect of having less time. However, the variable was insignificant for all, except for the math scores of black and Hispanic children. This result is contrary to the result found by Hill and O'Neill (1994).

The last three models explore the role of stress from marital status changes. In the third model the dummy for whether or not the child's mother ever changed marital status since the child was born, was not significant for white children. For black and Hispanic children, the scores for the Math and Reading Recognition tests were positively associated with ever experiencing a marital status change. This model also controls for income and poverty status, both of which are significant for the minority sample. Only poverty status was significant for the white sample. It is important to note that the type of marital status change is not specified. Changes could be from a single-parent status to a married status and vice versa.

The number of marital status changes was positively and significantly associated with all test scores of minority children. For the sample of whites, the test scores were negatively associated with the number of marital status changes. None were significant.

The final model examines whether the source of stress is having only one parent, not necessarily a

Table 1
Regression results for key variables by ethnicity

Model 1 - Current marital status with no income controls

	Blacks and Hispanics (N=1379)			**Whites (N=1009)**		
	Math	**ReadR**	**ReadC**	**Math**	**ReadR**	**ReadC**
Never	-1.94	-2.70	-3.19	-0.61	-1.87	-1.17
Married	(2.03)*	(2.66)*	(2.97)*	(0.34)	(0.95)	(0.45)
Separated	-2.39	-2.84	-3.14	-4.01	-2.86	-4.15
	(2.16)*	(2.42)*	(2.35)*	(2.25)*	(1.47)	(1.85)
Divorced	-1.20	-1.85	-1.69	0.57	1.73	2.21
	(1.04)	(1.51)	(1.24)	(0.48)	(1.34)	(1.42)
R^2	0.09	0.14	0.18	0.09	0.13	0.13
F-value	12.27	20.89	19.63	8.42	13.10	8.66

Model 2 - Current marital status *with* income controls

	Blacks and Hispanics			**Whites**		
	Math	**ReadR**	**ReadC**	**Math**	**ReadR**	**ReadC**
Never	-0.46	-0.78	-1.69	0.21	0.25	0.17
Married	(0.46)	(0.74)	(1.37)	(0.12)	(0.12)	(0.06)
Separated	-0.77	-0.77	-1.39	-3.71	-2.01	-3.57
	(0.67)	(.064)	(1.01)	(2.06)*	(1.04)	(1.57)
Divorced	0.32	0.06	0.03	1.07	3.07	2.83
	(0.27)	(0.05)	(0.02)	(0.87)	(2.30)*	(1.77)
Total Income	0.00007	0.00008	0.00010	0.00002	0.00005	0.00001
	(3.27)**	(3.53)**	(3.64)**	(0.68)	(2.04)*	(0.03)
Poverty	-2.29	-3.33	-1.20	-1.54	-3.57	-3.67
	(2.39)**	(3.28)**	(1.03)	(1.21)	(2.59)**	(2.16)*
R^2	0.17	0.11	0.19	0.09	0.14	0.13
F-value	21.30	12.76	18.58	7.34	12.48	7.77

Model 3 - Control for whether the mother's marital status ever changed.

	Blacks and Hispanics			Whites		
	Math	**ReadR**	**ReadC**	**Math**	**ReadR**	**ReadC**
Ever Changed	1.99	2.32	1.73	-0.93	-0.93	0.73
	(2.01)*	(2.22)*	(1.43)	(0.77)	(0.71)	(0.46)
R^2	0.11	0.17	0.19	0.08	0.14	0.13
F-value	15.42	26.65	21.93	8.20	14.09	8.56

Model 4 - Control for the number of times the mother's marital status changed.

	Blacks and Hispanics			**Whites**		
	Math	**ReadR**	**ReadC**	**Math**	**ReadR**	**ReadC**
Number of Changes	0.67	0.71	0.82	-0.04	-0.18	-0.22
	(2.27)**	(2.25)**	(2.36)**	(0.14)	(0.54)	(0.62)
R^2	0.11	0.17	0.20	0.08	0.13	0.13
F-value	15.53	25.66	22.33	8.15	14.06	8.57

Model 5 - Subsample of children whose mother's marital status never changed.
Includes a control for whether the child's mother was always single or always married.

	Blacks and Hispanics (N=563)			**Whites(N=421)**		
	Math	**ReadR**	**ReadC**	**Math**	**ReadR**	**ReadC**
Always single	0.36	0.26	-4.63	-1.16	-1.46	1.52
	(0.25)	(0.18)	(2.50)**	(0.41)	(0.47)	(0.32)
R^2	0.06	0.14	0.17	0.09	0.07	0.09
F-value	3.79	8.58	7.95	4.00	2.98	2.35

Coefficients are reported with corresponding t-values (absolute) below the coefficients
*significant at .05 level **significant at .01 level

marital status change. For this test, the sample is broken into a subsample of only those children whose mothers never experienced a marital status change since the child was born. This sample includes 563 minority children and 421 white children (397 and 264 respectively for the Reading Comprehension assessment).

The regression results show little difference in the measured cognitive abilities of children whose mothers have always been single and those whose mothers have always been married. The only significant negative effect was found for the Reading Comprehension test of the minority subsample. All other coefficients for the dummy variables were insignificant. Income seems less important in this model than in previous models. This result supports the theory that stability in the family arrangement and family income may be crucial in determining outcomes of children.

In the final model, the education level of the mother was positively associated with the test scores of children. The number of children in the household was negatively associated with the reading recognition scores of black and Hispanic children, and for all test scores of the Non-Hispanic white sample. The number of hours the mother worked was negatively associated with the math scores of the white sample. Other control variables had results similar to those in the previous models.

Discussion

Results suggest that lower incomes associated with never married and separated statuses can account for much of the negative effects of being in a single-parent family, especially for black and Hispanic children. For white children with separated mothers, however, negative effects still exist for the math test. This result suggests that there is a difference between having a separated mother and having a divorced mother.

The impact of income is striking given how young the children are. One would expect income to be important for later educational outcomes, which depend more on the availability of family resources for further schooling. Some studies have found that differences in measured cognitive ability by income are less profound at younger ages (Ceci, 1990). Further work could explore just how income and marital status are entwined in the educational outcomes of these children.

Results of the two models that test the stress theory find little support for this theory. A marital status change was positively associated with test scores for minority children, and showed no relationship with the white sample. The number of marital status changes was also positively associated with higher test scores for minority children. This result is puzzling. One explanation may be that the category of marital status changes includes changes from single to married. This may be a positive change for the child because there is now an adult male in the household. Observed changes could also be from separated to divorced statuses, which is predominantly a change in legal status. The implications of this type of change might be different than other changes. Another explanation, in the case of going from married to divorced, may be that the nature of the marriage was so bad, that when the husband left, the child's emotional or physical state improved.

Results of the last model suggest that there is little support for the theory that there is stress simply from having only one parent. Those who have lived with an always single-mother did no worse than those who lived with an always married mother, except in the case of the Reading Recognition scores for minority children. This result is not surprising once income and a measure for work hours of the mother are controlled. Other studies have found that stability is very important for child outcomes, whether there are two parents or just one (Block, Block, & Gjerde, 1986).

A general implication of these results is that after controlling for income, poor adult outcomes of children of one-parent families may not necessarily be attributed to impaired cognitive development. It may be true that these test scores have less to do with the probability of dropping out of school or the educational attainment of children than we think. It is also possible that marital status effects accumulate over a lifetime and are, therefore, more detectable for the adult outcomes of children.

Acknowledgements

The author is grateful to Jennifer Gerner, Douglas Gurak, Michael Rendall, and David Burchfield for comments and guidance.

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Endnotes

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2. It should be noted that the terms measured cognitive development and achievement are being used somewhat ambiguously. A discussion of what the tests measure and how success on these tests relates to later life outcomes is beyond the scope of this research.
3. These tests are widely used measures of a child's achievement and are consid[illegible] reliable and valid measures (Baker, Ke[illegible] ott, & Quinlan, 1993). Raw scores for all tests were standardized by the age of the child.
4. In 1990 these women were between the ages of 25 and 32, meaning that their childbearing is incomplete. The sample of children represents only two-thirds of a completed birth cohort to women ages 25 to 32 in 1990 (Baker et al., 1993).
5. Tests were administered only to those children over five. The user's manual warns about the stability of the Reading Comprehension scores of children under the age of seven (Baker et al., 1993). For this reason, only those over seven are used for this test.
6. This category is dominated by those whose mother never married.

Income Elasticities For Clothing Expenditure: A Comparison Among Different Occupational Groups

The 1991-1992 Consumer Expenditure Survey was used to estimate income elasticities for clothing expenditure among different occupational groups, controlling selected demographic and socioeconomic factors. Significant relationships were found between income and clothing expenditure. Clothing expenditure was income elastic among certain occupational groups. In this study, education and region were negatively related to clothing expenditure. Income elasticities of clothing expenditure by different occupational groups can be used by retailers and producers developing marketing strategy.

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Clothing, like food and shelter, is a basic and necessary element of human life. According to Engel's law, as people get richer, they spend a smaller proportion of their total income on necessities. However, previous studies have shown that this "law" was not always correct (Monroe, 1974; Winakor, 1989). Clothing may be considered either a moderate luxury, or may fall between a luxury and a necessity (Houthakker, 1957; Dardis, Derrick, & Lehfeld, 1981; Winakor, 1989). Clothing not only protects the body; it is also used as a tool to attain higher levels of career achievement, especially by women (Ericksen & Sirgy, 1985, 1989). In addition, one's clothing influences other's perception and thus may contribute one's self-acceptance and self-esteem (Gibbins,1969; Gibbins & Gwyn,1975)

Recently, the increase in the labor force participation of women especially married women and women with children is a significant trend affecting the apparel industry. Dardis et al. (1981) found that households with a working wife allocated more income to clothing than did households with a non-working wife.

Dardis et al. (1981) found that clothing expenditure was elastic when total expenditures were used as a proxy for permanent income. Clothing expenditure increased more than one percent as income increased one percent. It is important for retailers and producers to know how much people will change clothing expenditure as their income increases and to target consumers effectively. Family economists are also interested in understanding clothing expenditure patterns among different occupational groups.

The purpose of this research is to examine income elasticity for clothing consumption among different occupational groups. The 1991-92 Consumer Expenditure Survey by the Bureau of Labor Statistics was used in this study.

Literature Review

Most of the previous studies used cross-section data from the Consumer Expenditure Survey (CES) to analyze clothing expenditure. In these studies, price was assumed to be constant; that is, every consumer faced the same price. In most studies, income was positively related to clothing expenditure. Either current income or total expenditure was used in these studies to analyze the relationship between household income and clothing expenditure (Houthakker & Taylor, 1970; Dardis et al., 1981; Frisbee, 1985; Winakor, 1989; Norum, 1989). Both Houthakker and Taylor (1970) and Dardis et al. (1981) compared the use of total consumer expenditures as a proxy for permanent income and disposable income as income measures and examined the effect of each measure on clothing expenditure. Both studies found that total expenditures served as a better explanatory variable, probably because families had more control over their expenditures than their income in the short run. In addition, Prais and Houthakker (1971) suggested that total consumption expenditure was shown to give a better fit than disposable income in models designed to predict expenditures for consumption categories such as clothing. However, Prais and Houthakker (1971) found that there was a bias in the use of total expenditures as an explanatory variable because it included the dependent variable. But, given the small proportion of total expenditures, they concluded the bias was not a problem. Overall, when total expenditure was used as an explanatory variable, clothing expenditure was found to be income elastic (Dardis et al., 1981; Frisbee, 1985; Winakor,1989; Bryant & Wang,1990). In contrast, clothing expenditure was income inelastic when disposable income was used (Dardis et al, 1981; Norum, 1989).

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Few studies have examined income elasticities of clothing expenditures among different occupations. Most studies examined the effect of occupation on clothing expenditure (Dardis et al., 1981; Horton & Hafstrom, 1985; Norum, 1989). Dardis et al. (1981) found that being a salaried manager, clerical worker, or sales worker was significantly and positively related to clothing expenditure while being in the non-working and retired group was negatively related to clothing expenditure. Norum (1989) found that white-collar workers spent more on clothing than did blue-collar workers. Due to the increase in female labor force participation, many studies also focused on the effect of wife's occupation and employment status on clothing expenditure. Additionally, these results suggest that the wife's occupation significantly affected clothing expenditure (Dardis et al., 1981; Nelson, 1989; Norum, 1989).

Age, gender, family type, social class, marital status, and location were included in the clothing expenditure model to control for differences in taste and preference related to clothing expenditure. Most studies investigated the impact of the number of family members on clothing expenditure by using some combination of age and gender categories. After controlling for income, a positive relationship between family size and clothing expenditure has been found (Dardis et al., 1981; Frisbee, 1985; Hager & Bryant, 1977; Norum, 1989; Deweese & Norton, 1991). However, using family size as a continuous variable, Horton and Hafstrom (1985) discovered family size had no significant effect on clothing expenditure in female-headed families, but did have a significant effect on clothing expenditure in two-parent families.

Age of household head has been measured as a categorical variable (Dardis et al, 1981; Hager & Bryant, 1977; Norum, 1989) or a continuous variable (Frisbee, 1985; Horton & Norton, 1991) in previous studies analyzing clothing expenditure. A nonlinear relationship between age and clothing expenditure has been found; clothing expenditure increased as the age of respondents increased, but at a decreasing rate (Dardis et al., 1981; Frisbee, 1985; Norum, 1989; Deweese & Norton, 1991).

Households with married heads were found to spend less on clothing than did other households (Dardis et al., 1981; Norum, 1989). Furthermore, Lino (1994) found that never-married mothers spent the lowest dollar amount on clothing among single-mother and married-couple families with children. With respect to gender, male headed households spent less on clothing relative to female headed households (Frisbee, 1985).

After controlling for income, clothing expenditure and education were consistently found to be positively related (Dardis et al, 1981; Frisbee, 1985; Hager & Bryant, 1977; Norum, 1989; Horton & Hafstrom, 1985). Additionally, the difference in clothing expenditure between households headed by high school graduates and heads with other education levels was much greater in Norum's (1989) study than that of Dardis et al.'s (1981).

In studies by Dardis et al. (1981) and Norum (1989), urban households spent more on clothing relative to rural households. But, no significant effect of residence on clothing expenditure was found by Hager and Bryant (1977).

Dardis et al. (1981) examined the effect of race, and found that blacks spent more money and devoted a larger budget share to clothing than did whites. However, no significant relationship between clothing expenditures and race was found by either Hager (1977) or Norum (1989).

Theoretical Model

Demand theory was used for household expenditure on textiles and clothing (Dardis et al., 1981 Frisbee, 1985; Norum, 1989). According to this theory, consumers satisfy their wants within limited resources among available goods and services. Engel curves were used to estimate the relationship between expenditure and income, and price was assumed to be constant. In this study, multiple regression analysis was used to estimate the income elasticity of clothing expenditure, controlling for selected socioeconomic and demographic variables. Given the nonlinear relationship between income and clothing expenditure found in previous studies, the double logrithmic function was used in this study (Dardis et al.,1981; Frisbee, 1985; Norum, 1989). Income elasticity of expenditures was the percentage change in expenditure associated with a one percent change in income. The empirical model used in the study was:

$$\text{Log } C_j = a + b \log Y_i + \Sigma c_j X_{ji} + e_i, \quad i = 1, 2, \ldots, n$$

where: $\text{Log } C_i$ = log of clothing expenditure of household i, $\text{Log } Y_i$ = log of total expenditures of household i, X_{ji} = other independent variables relating to household i (family size, age, gender, education, occupation of both heads and spouses, marital status, race, and region), e_i = error term, and n = number of observations.

Sample

Data for this study were from the interview component of the 1991-92 Consumer Expenditure Survey (CES), collected by the Bureau of Labor Statistics. The data provided information on income, expenditures, and major sociodemographic characteristics of consumer units. Cases selected for this study were those who had completed four consecutive quarters interview and who had complete income information. In this study, there were 1988 consumer units, representing a cross section of noninstitutional consumer units in the United States.

Table 1

Definition of Independent Variables (n = 1988)

Variable	Mean
Log total expenditures (continuous)	$ 29413.96
Age of reference person (dummy)	
less than34	
21%	
35-54	41%
55-64	13%
greater than 64*	25%
Family size (continuous)	2.7
Education of reference person (dummy)	
less than high school	22%
high school*	31%
some college	23%
college graduate	24%
Occupation of reference person (dummy)	
professional & managerial	23%
sales & technical	15%
self-employed	7%
service	6%
others (farming, forestry, fishing, craft, repair, labors, operators, and armed forces)	19%
retired & non-working*	30%
Occupation of spouse (dummy)	
professional & managerial	11%
sales & technical	15%
self-employed	11%
service	6%
others (farming, forestry, fishing, craft, repair, labors, operators, and armed forces)	5%
no spouse	40%
retired & non-working*	21%
Marital status of reference person (dummy)	
married	62%
not married* (widowed, divorced, separated, and never married)	38%
Gender of reference person (dummy)	
female	34%
male*	66%
Race of reference person (dummy)	
black	11%
non-black* (white, Asian American Indian, Aleut, and Eskimo)	89%
Region (dummy)	
urban northeast	20%
urban midwest	24%
urban south	25%
urban west*	20%
rural	11%

* reference variable

Variables

The dependent variable in this study was household expenditure on clothing. It included the total dollar amount of household expenditure on clothing and clothing services (dry-cleaning, laundry, and alteration). Average household clothing expenditure was $ 1171.73 per year. In this study, to capture income elasticity, log of clothing expenditure was used.

Ten independent variables were included in this study, income, age, family size, gender, marital status, education, occupation of both household head and spouse, race, and region. The definition of independent variables is given in Table 1.

Results and Discussion

A regression analysis was performed using total expenditure as a proxy for permanent income, age, family size, education, occupation, marital status, gender, race, and region as the predictor variables and clothing expenditure as the criterion variable. Regression results are presented in Table 2. The adjusted R-square value that indicated the goodness of fit of the model was found to be 17 percent in this study. Although this value was small, the probability of F-test (0.0001) showed that the predictor variables included in this model had a significant influence on log of clothing expenditure at the 0.1 level. Consistent with previous studies, the income proxy was positively and significantly associated with clothing expenditure (Dardis et al., 1981; Frisbee, 1985; Horton & Hafstrom, 1985; Norum, 1989).

The double-log model was used to indicate income elasticity of clothing expenditure. When income increased one percent, clothing expenditure increase 4.17 percent, other variables being held constant. Therefore, clothing expenditure was shown to be income elastic. Compared to Dardis et al.'s study (1981), the magnitude of income elasticity of clothing expenditure in the current study was higher. The difference may be due to changes over time. Dardis et al. used data from 1972 to 1973 and this study examined data from 1991 to 1992.

Income elasticities for clothing expenditure were calculated for the occupational groups that were significantly related to clothing expenditure level in this

Table 2

Household Expenditures on Clothing: Results of The Regression Analysis

Variable	CoefficientL
Log of total expenditures	**4.17**
Age (greater than 64)	
less than 35	**1.12**
35-54	
1.02 55-64	0.46
Family size	0.10
Education (high school)	
less than high school	**-0.48**
some college	-0.37
college graduate	-0.34
Occupation of respondents (retired & non-working)	
income X professional & managerial	**-2.17**
income X sales & technical	**-2.04**
income X service	**-2.18**
income X others (farming, forestry, fishing, craft, repair, labors, operators, and armed forces)	**-1.44**
income X self-employed	-0.67
Occupation of spouse (retired & non-working)	
income X professional & managerial	-0.65
income X sales & technical	**-1.24**
income X service	-0.84
income X others	-0.19
income X self-employed	-1.34
income X no spouse	-0.57
Occupation of respondents (retired & non-working)	
professional & managerial	**21.66**
sales & technical	**20.29**
service	**21.63**
others	13.85
self-employed	5.73
Occupation of spouse (retired & non-working)	
professional & managerial	6.78
sales & technical	**13.08**
service	8.75
others	2.16
self-employed	14.14
no spouse	5.83
Marital status (not married)	
married	-0.33
Gender (male)	
female	0.03
Race (non-black)	
black	0.48
Region (urban west)	
urban northeast	-0.32
urban midwest	-0.11
urban south	0.23
rural	**-0.85**

Adjust R- square	0.17
F value	11.74

Results in bold print are statistically significant at the 0.1 level

study. These occupational groups were households whose respondent had a professional or managerial occupation, or who was employed in the service or "others" occupational group, and households whose both head and spouse had sales or technical occupation. These results appeared to support Dardis et al.'s (1981) finding that being a salaried manager and sales worker was significantly associated with clothing expenditures. In this study, to know the net effect of income elasticities for different occupational groups, the raw regression coefficient on income must be added to the raw regression coefficient on the interaction term. The interaction term presented the interaction between logarithmic income and regression coefficient of being each occupational group. Results of income elasticities for clothing expenditure among different occupational groups are given in Table 3. For example, the case of professional and managerial group was as follows:

$$4.17 + (-2.17) = 2.00$$

This tells us that, given a one percent increase in income, households whose respondent was in a professional or managerial occupation would spend 2.00 percent more on clothing. Households whose respondent had a sales or technical occupation would spend 2.13 percent more on clothing, whereas households whose respondent was employed in service would spend 1.99 percent more on clothing. Households whith a respondent in the "others" occupation would spend 2.73 percent more on clothing. And, households whose spouses had a sales or technical occupation would spend 2.93 percent more on clothing.

Consistent with previous studies, a non-linear relationship between age and clothing expenditure was found (Dardis et al., 1981; Frisbee, 1985; Norum, 1989). Although there was a significant and positive relationship between age and log of clothing expenditure for the less than 34 age group and the 35-54 age group, there was nonsignificant relationship between age and clothing expenditure for the 55-64 age group. Respondents under 35 years of age spent 1.12 percent more on clothing than did respondents over the age of 65. Furthermore, respondents aged from 35 to 54 spent 1.02 percent more on clothing than did respondents over age 65. Expenditure on clothing declined as the age of respondents reached 55 and over. This may reflect the accumulation of inventory over the later life stages.

Dardis et al. (1981) and Norum (1989) noted a significant and positive relationship between education and clothing expenditure. In this study, a significant and negative relationship between education and log of clothing expenditure was found for the less than high school group compared to the high school graduate

Table 3

Results of Income Elasticities for Clothing Expenditure Being Different Occupational Groups

Variable	Income Elasticity
Occupation of respondent	
(retired & non-working)	
professional & managerial	**2.00**
sales & technical	**2.13**
service	**1.99**
others	**2.73**
self-employed	3.50
Occupation of spouse	
(retired & non-working)	
professional & managerial	3.52
sales & technical	**2.93**
service	3.33
others	3.98
self-employed	2.83
no spouse	3.60

Results in bold print are statistically significant at the 0.1 level

group. Respondents having less than a high school education spent 0.48 percent less on clothing than did respondents having high school education.

Family size in this study was not significantly related to log of clothing expenditure. This result was supported by Horton and Hafstron's finding (1985) that family size was significantly related to clothing expenditure for two-parent families but not for female-headed families. However, the finding in previous studies that family size was significantly related to clothing expenditure may be the result of using a different measure of family size (Frisbee, 1985; Hager & Bryant, 1977; Norum, 1989).

In contrast to previous studies (Dardis et al., 1981; Frisbee, 1985; Norum, 1989), marital status was not significantly related to clothing expenditure. This inconsistency may be because the not married category included widowed, divorced, separated, and never married. Members of these groups may behave differently from one another. Nether gender nor race (Norum, 1989) had no impact on clothing expenditure in this study.

Rural households spent 0.85 percent less on clothing than did households in the urban west locations. This was the only significant result for residence.

Conclusions and Implications

In this study, clothing expenditure was income elastic. In addition, the magnitude (4.17) indicated that clothing was considered to be a luxury good. Working in certain occupational groups was significantly related to log of clothing expenditure. These occupational groups were: respondents in the professional and managerial group, respondents in the service group, respondents in the "others" group which included farming forestry, fishing, craft, repair, labors, operators, and armed forces, and respondents and spouses who were in the sales and technical group. For these five different occupational groups, clothing was also shown to be income elastic. Among respondents, work in the "others" group was associated with greater income elasticity than that associated with work in the professional and managerial group, in the sales and technical group, or in the service group. Therefore, a one percent change in income of respondents working in the "others" group would be associated with a greater than one percent change in clothing expenditure and the magnitude of this change would be greater than that observed for respondents working in the professional and managerial group, in the sales group, or in the service group. In addition, spouses who worked in the sales and technical group had a relatively high income elasticity for clothing expenditure.

Effects of socioeconomic and demographic characteristics on log of clothing expenditure varied. Those who were less than 35 and those aged from 35 to 54 spent relatively more on clothing than those aged 65 and older. Spending by those aged from 54 to 64 was not significantly different from spending by the 65 and older group. Compared to respondents having a high school education, respondents with less than high school education spent relatively less on clothing. Households in rural locations spent relatively less on clothing compared to households in the urban west. In this study, family size marital status, gender, and race was not significantly related to log of clothing expenditure.

Study results have implications for clothing producers and retailers. Consistent with economic theory, clothing expenditure was income elastic; as income increased by one percent, survey participants would change their clothing expenditure by more than one percent. Direction and amount of change were found to be related to age, education and occupation. Noting this information can help clothing producers and retailers develop an effective market strategy. For example, senior college students may need practical a formal clothing for a new job. Given their education level, they will apply likely for certain jobs, such as, sales, technical work, or service work. And they are in an age and occupational group likely to spend more on clothing. Thus, clothing producers and retailers should target to ads to this group.

For future study, it may be helpful to reclassify the occupation of respondents and spouses by gender to better understand gender differences in clothing expenditure. Also, in this study, no significant relationship was found between family size and clothing expenditure. In future studies, it might be helpful to use dummy variables to measure the age and gender of family members. Also, marital status could be divided into married, never married, formerly married to capture effects on log of clothing expenditure.

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Endnote

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Consumer Interests Annual *Volume 42, 1996*

On the Performance of Asset Allocation Mutual Funds

This manuscript is based on the award winning 1996 ACCI Master's Thesis

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Over the past two decades the financial markets have undergone a dramatic change, not only in the types of securities offered, but also in the services available. Due to its innovative nature, the mutual fund industry has been one of the most expansive areas, growing in both number and complexity. This growth has made mutual fund investment a time consuming and complex task, thus reducing the investment ease that mutual funds are known for. With over 5300 funds and 33 different investment objectives to choose from, instead of simplifying investing decisions, mutual funds have actually added to the problems individual investors face in trying to select the investment(s) that most appropriately fit their needs.

One particular class of mutual funds, called an *asset allocation* fund, profess to have the answer to investors problems. Since 1991, over 82 new asset allocation funds have been created. These funds represent 63% of all asset allocation funds that Morningstar Inc. follows.[2] Today, 130 asset allocation funds manage almost $40 billion dollars worth of assets.

Asset allocation funds claim to offer investors an "all-in-one" investment by employing an *active* management strategy and diversifying across as many broad asset classes as possible. Opposed to a *passive* or "buy-and-hold" management strategy, these actively managed funds utilize *asset allocation*, a strategic decision making process, to determine the optimal mix of shareholder's resources across a wide variety of international and domestic securities. This process involves the periodic rebalancing of these allocations which, based on forecasts of near-term relative market and asset class valuations, are made in an attempt to provide investors with high total return, no matter what market conditions prevail.

However, as with any investment, the bottom line for investors is performance. In order for investors to make informed and effective decisions regarding the potential an investment has in helping them attain their financial goals, they need quality information concerning the ability of the investment to fulfill its performance claims. The purpose of this study is to address some of the performance issues related to asset allocation mutual funds, and provide investors with the information they need to make such decisions.

Theoretical Framework

Mutual funds, in general, and asset allocation funds, in particular are a type of asset called a "managed asset." Their performance is attributable, in part, to the skills of the management of the fund. Moreover, investors pay annual fees for this management which directly reduces the returns they earn on their investment. Performance evaluation must, therefore, take into account not only the return performance of these funds, but also the contribution that management has to this performance. In order to justify their use of active management and the fees paid by shareholders for this management, asset allocation funds must not only earn returns in excess of those earned by a passively managed fund, but must also demonstrate that their active strategies contribute to this performance. The ability of these funds to fulfill these obligations is focus of this study.

The framework used in constructing the performance measures employed in this study is the Capital Asset Pricing Model (Sharpe 1964), (Lintner 1965a), and (Mossin 1966).[3] The CAPM provides a set of predictions concerning the equilibrium expected returns on risky assets. "The CAPM provides the framework for determining the relationship between expected return and risk for individual securities as well as portfolios" (Farrell 1983, p.61). The CAPM takes the following form:

$$E(r_i) = r_f + [E(r_m) - r_f]B_i + e_i \qquad (1)$$

where $E(r_i)$ is the expected return on security (i), r_f is the risk-free rate, $E(r_m)$ is the expected return on the market portfolio, B_i is the risk associated with security (i), e_i is the error term.

In words, the CAPM states that the expected rate of return for security (i) is equal to risk free rate plus a "risk premium" that is proportional to the amount of risk incurred by holding the security. The risk premium of a security is the return above the risk-free rate that compensates investors for assuming the additional risk associated with that security. In general, the risk-free rate is assumed to be that of the 90 day United States Treasury bill and is the minimum compensation investors would expect for simply foregoing consumption. The beta coefficient, B_i, is the "factor of proportionality" which determines the magnitude of the risk premium earned by a security. The beta of a security can be calculated as follows:

$$B_i = o_{im} / o^2 m \qquad (2)$$

where o_{im} is the covariance between the return on security (i) and the return on the market (r_m), and o^2_m is the variance of the return on the market. By measuring the sensitivity of a security's returns to changes in the rate of return on the market, B_i, is used to quantify the risk of a security.

Data and Empirical Analysis

The return performance of 47 asset allocation funds was evaluated using two CAPM based, risk-adjusted measures of return performance as proposed by Sharpe (1966) and Treynor (1965). Then, following Henriksson & Merton (1981), a CAPM based parametric model was employed to evaluate the contribution that the active management strategies used by these funds have on this performance. A listing of the asset allocation mutual funds studied in this thesis appears in table (1).

The monthly return data of 47 mutual funds listing *asset allocation* as their objective, the S&P 500 composite index, and the 90 day U.S. Treasury bill were acquired from the Morningstar Inc. Mutual Funds Ondisc database. Sixty monthly (total) returns were used, beginning in October 1989 and ending September 1994.[4]

The choice of a uniform 60 months was made to ensure that the performance of each fund is assessed through equivalent market conditions and to increase comparability across funds. Additionally, the choice of a five year sample is based on the observation that capital markets are cyclical. A five year sample allows the performance of the funds to be evaluated through a wide variety of market conditions. During the sampling period, the 47 funds were exposed to 2 distinct up (bull markets) and 2 distinct down (bear markets).[5] As these funds claim that their active management strategies allow them to take advantage of changing market performances, these contrasting market conditions provide a the perfect backdrop to assess their ability to do so.

Measures of Return Per Unit of Risk

Treynor index. Due to the broad asset diversification offered by asset allocation funds, it has been suggested by some asset allocation managers that their funds provide a solid foundation from which a portfolio of mutual funds could be constructed (Zimmerman 1993). That is, an asset allocation mutual fund would provide a stable core from which investors could add more specialized and aggressive funds to while further diversifying their portfolios. To evaluate this potential, the Treynor Index is calculated for each fund.

The Treynor Index employs the beta of a portfolio, B_p, as the relevant measure of risk. The theory behind this is, as securities are added to a portfolio the firm-specific risk is reduced up to the point where additional securities do not further reduce the overall portfolio risk. At this point, the relevant measure of the risk of the portfolio is the systematic risk as represented by B_p. Systematic risk or "market risk" is the undiversifiable risk that an investor must bear due to fluctuations in the overall market. A portfolio's beta is the weighted average of the beta's of its component securities, where the weights are the proportion of wealth in asset (i).[6] A security being considered for inclusion in an investor's portfolio should, therefore, be evaluated on the impact it has on a portfolio's systematic risk B_p. The Treynor Index is written as:

$$T_p = [E(r_p) - E(r_f)]/B_p \qquad (3)$$

where $E(r_p)$ is the average return on portfolio (p), $E(r_f)$ is the average return on the 90 day U.S. Treasury bill, $E(r_p) - E(r_f)$ is the average risk premium over the sample period, B_p and is the beta calculated over the sample period.

The Treynor Index is a performance measure sensitive to "depth" (Haugen 1993). Depth is a measure of the magnitude of risk premium captured for each unit of risk that is assumed by the fund. The Treynor index adjusts the risk premium captured by the portfolio by the amount of risk, B_p, that was taken to achieve it.

Using the time-series CAPM developed by Black, Jensen, and Scholes (1972), the beta coefficient, B_p, for each asset allocation fund is estimated.[7] Treynor indices are then calculated for each individual asset allocation fund and the S&P 500 composite index. The Treynor index calculated for the S&P 500 composite, T_m, is used as the passive benchmark. $T_p > T_m$ indicates that, on average, the performance of fund (p) is above that of a passively managed portfolio. Similarly, $T_p \leq T_m$

indicates that, on average, the performance of fund (p) is equal to or below that of a passively managed portfolio.

Sharpe index. Often dubbed "all-in-one" investments, asset allocation funds would lead individual investors to believe that a single portfolio could provide for all their investment needs. This would have great appeal to first-time investors and/or investors with limited means.

In order to evaluate each asset allocation fund as if it were an individual investor's sole investment, the Sharpe Index for each fund is calculated Sharpe (1966). Investors choosing to place their entire investment in a single portfolio will be concerned with the total variability or risk of the fund. The Sharpe Index, therefore, uses the standard deviation of a portfolio's returns as its relevant measure of risk. The Sharpe Index is written as:

$$S_p = [E(r_p) - E(r_f)]/o_{rp} \qquad (4)$$

where $E(r_p)$ is the average return on portfolio (*p*), $E(r_f)$ is the average return on the 90 day U.S. Treasury bill, $E(r_p) - E(r_f)$ is the average risk premium of the portfolio over the sample period, and o_{rp} is the standard deviation of returns earned by the portfolio over the sample period.

The Sharpe Index is a performance measure sensitive to "breadth" (Haugen 1993). Breadth is a measurement of the risk premium earned per unit of risk exposure. Similar to the Treynor index, the Sharpe index adjusts the risk premium captured by the portfolio by the amount of total risk, o_{rp}, that was taken to achieve it.

A Sharpe index is calculated for each of the 47 asset allocation funds as well as the S&P 500 composite. As with the Treynor index, the Sharpe index of the S&P 500, S_m, is used as a passive benchmark from which the performance of the individual asset allocation can be compared to. $S_p > S_m$ indicates that, on average, the performance of fund (p) is above that of a passively managed portfolio. Similarly, $S_p \leq S_m$ indicates that, on average, the performance of fund (p) is equal to or below that of a passively managed portfolio.

Tests of Forecasting Ability

Asset allocation funds generally employ two forms of asset allocation strategies, *policy* asset allocation and *tactical* asset allocation. Policy asset allocation establishes the appropriate "normal" asset mix of the portfolio that is consistent with investor's objectives, time horizon, and risk tolerance. Tactical asset allocation involves active departures from this policy mix that are instituted based on economic forecasts. These near-term forecasts of relative market and asset class values result in the tilting of the policy mix within their prescribed ranges. This tilting involves the redistribution or reallocation of portfolio assets which is accomplished by identifying securities appropriate to these forecasts. Implicit in the use of tactical asset allocation is the assumption that fund management possesses such forecasting abilities.

Henriksson and Merton (1981) suggest that the management of portfolios chooses among "discretely different systematic risk levels for the portfolio." In particular, the portfolio will have two risk levels, one for when the market is up (bull markets) and one for when the market is down (bear markets). It is assumed that portfolios with management that possess this *market timing* ability will hold a larger portion of the market portfolio when the return on the market is high. The portfolio beta, B_p, will therefore, increase as the return on the market, r_m, increases. Henriksson and Merton specify the following parametric model to test for the presence of this type of forecasting ability in portfolio management:

$$r_{pt} - r_{ft} = a_p + B_1x_{1t} + B_2x_{2t} + e_{pt} \qquad (5)$$

where r_{pt} is the return per dollar on portfolio (p) at time (t), r_{ft} is the return per dollar on the risk-free asset at time (t), r_{mt} is the return on an index used as a proxy on the market portfolio at time (t), $x_t = r_{mt} - r_{ft}$, $x_{1t} = \min[0, x_t]$, and $x_{2t} = \max[0, x_t]$.

The coefficients of the regression can be interpreted as follows; When $x_t > 0$, $x_{1t} = 0$ and $x_{2t} = x_t$. In this case the coefficient B_2 can be interpreted as the risk level for bull markets. When $x_t < 0$, $x_{1t} = x_t$ and $x_{2t} = 0$. In this case the coefficient B_1 can be interpreted as the risk level for bear markets. Using this specification, a test for the presence of market-timing ability would be written as:

H_o: $B_2 > B_1$ *Market Timing Ability*

and

H_a: $B_2 \leq B_1$ *Lack of Market Timing Ability*

Additionally, *security selection* ability, or the capacity to identify securities which comply with the current *tactical* asset mix, can be identified by the intercept parameter of the specification. In this model, a_p is portfolio (p)'s expected excess return if the market's excess return is zero. The CAPM predicts that the average value of a_p is expected to be zero. Therefore,

Table 1

Return Per unit of Risk Measures

Fund	Name	Sp	Sp Rank	Tp	Tp Rank	Bp
1	General Securities	0.1198	27	0.613	22	0.82224***
2	SoGen International	0.3209	2	1.6989	4	0.32317***
3	Strong Investment	0.104	33	0.5520	24	0.35755***
4	Permanent Portfolio	0.0242	44	-0.1288	45	0.30513***
5	Bruce	-0.0194	43	-0.1229	44	0.83487***
6	USAA Investment Cornerstone	0.111	32	0.5188	27	0.53460***
7	Hancock Freedom Gold \ Govt B	0.0644	38	0.4529	36	0.25546***
8	Flex-funds Growth	0.0361	41	0.1958	43	0.49729***
9	Connecticut Mutual Total Return	0.1900	9	0.7216	16	0.62686***
10	United Gold \ Government	0.0299	42	25.410	1	0.00639
11	Dreyfus Captal Value A	0.0621	47	0.9308	8	-0.16577***
12	Blanchard Global Growth	0.0439	40	0.2039	42	0.52667***
13	Phoenix Total Return A	0.1863	11	0.7225	15	0.58456***
14	Stagecoach Asset Allocation	0.2021	7	0.8923	9	0.45096***
15	PaineWebber Asset Alloc B	0.0521	39	0.2203	41	0.54028***
16	Bailard Biehl Diversa	0.095	35	0.4924	31	0.65462***
17	Smith Barney Strategy Inv B	0.1276	3	0.4864	33	0.74152***
18	Oppenheimer Asset Allocation A	0.1337	21	0.5579	23	0.47628***
19	Elfun Diversified	0.1693	14	0.6727	17	0.49658***
20	Invesco Total Return	0.1817	12	0.6687	18	0.63663***
21	Prudential Allocation Strategy B	0.1116	30	0.4257	38	0.66719***
22	Prudential Allocation Managed B	0.165	15	0.6219	20	0.54251***
23	MIMLIC Asset Allocation A	0.1225	25	0.4732	34	0.65309***
24	Princor Managed	0.0901	36	0.3447	40	0.68863***
25	FBL Managed	0.3822	1	4.5309	2	0.09285***
26	Fortis Advantage Asset Alloc	0.1217	26	0.4881	32	0.63657***
27	Carillon Capital	0.1814	13	0.7521	13	0.49510***
28	EBI Flex	0.1412	19	0.5340	25	0.71920***
29	Seafirst Asset Allocation	0.1338	20	0.5016	28	0.53963***
30	Overland Express Asset Alloc A	0.1886	10	0.8129	11	0.47446***
31	API Total Return	-0.0363	46	-0.1546	46	0.81487***
32	API Special Markets	-0.1284	48	-0.6178	48	0.73269***
33	Comstock Partners Strategy O	0.152	17	3.4869	3	0.07381**
34	Dean Witter Managed Assets	0.1247	24	0.4929	30	0.65734***
35	Flex-funds Muirfield	0.1293	22	0.7612	12	0.42789***
36	Dean Witter Strategist	0.1192	28	0.4459	37	0.92107***
37	Vanguard Asset Allocation	0.1997	8	0.7481	14	0.70943***
38	Fremont Global	0.1147	29	0.4666	35	0.53724***
39	MetLife-State St Managed Ast A	0.1501	18	0.6176	21	0.53548***
40	Fidelity Asset Manager	0.2755	4	1.2164	7	0.48698***
41	Crabbe Huson Asset Allocation	0.1614	16	0.6502	19	0.54703***
42	Quest for Value Opportunity A	0.2091	6	0.8226	10	0.92274***
43	Merrill Lynch Global Alloc A	0.3129	3	1.4010	5	0.49182***
44	Merrill Lynch Global Alloc B	0.2725	5	1.2264	6	0.48710***
45	Merriman Asset Allocation	0.0976	34	0.5262	26	0.31806***
46	PaineWebber Global Grth\Inc A	0.0826	37	0.5012	29	0.50684***
47	North American Asset Alloc C	-0.034	45	-0.1572	47	0.53616***
48	Standard & Poor's 500 index	0.1114	31	0.4003	39	1.00000

*** Significant at lambda < .01 and **Significant at lambda < .05

portfolio managers that are successful in identifying mispriced securities would have an a_p consistently greater than zero. The subsequent test for this ability would be written as:

H_o: $a_p > 0$ *Security Selection Ability*

and

H_a: $a_p \leq 0$ *Lack of Security Selection Ability*

To test for the presence of market timing and security selection abilities, this study uses the two factor model specified in equation (5).

Results

Table 1 contains the results of the calculated Treynor and Sharpe indices using equations (3) and (4), respectively. Overall, the results of the two measures were quite similar.

When the returns were adjusted for systematic risk, B_p, 38 funds or 79% had Treynor measures above that of the S&P 500 composite index (passive benchmark), while 9 had indices that were below. Of the 9 funds below the S&P 500, 5 had negative Treynor indices indicating that, on average, they performed worse that the risk-free asset. Similarly, when the returns were adjusted for total risk, σ_{rp}, 30 funds or 66% had Sharpe measures above that of the S&P 500 and 17 had measures that were below. Of these 17 funds, 6 had negative Sharpe indices, again, indicating performance worse than that of the risk-free asset..

Of equal importance are the results of a delineation of the Treynor and Sharpe indices of the top 5 and 10 funds as ranked by each index. Comparing the aggregate mean return and beta, B_p, of the top 10 funds as ranked by the Treynor index with those of the S&P 500 index revealed that, collectively, the larger Treynor index is, on average, a result of a 10% increase in mean return and a 62% decrease in risk (as measured by B_p). Moving from the top 10 to the top 5 ranked funds, the increase in the Treynor measure is due to a 50% decrease in risk despite a 7% decrease in mean return. Similarly, comparing the mean monthly return and standard deviation of the S&P 500 composite index to the aggregate mean monthly return and standard deviation of the top 10 funds as ranked by the Sharpe Index, revealed that, collectively, their higher ranking above the S&P 500 was due to a 17% increase in mean return and 39% decrease in standard deviation. Again, moving from the top 10 to the top 5 ranked funds, the higher Sharpe ranking was due to 3% increase in mean return and a 15% decrease in standard deviation. These results would imply that although these funds were able to, on average, earn higher expected returns that the S&P 500 index, the dominant factor in their higher risk adjusted performance was their ability to reduce portfolio risk.

Table 2 contains the results of the two factor model of market timing and security selection abilities (equation 5). The results show little evidence to support the idea that, collectively, the management of asset allocation mutual funds have the ability to either time the market or accurately perform security analysis.

When testing for the presence of security selection ability it was found that 14 funds exhibited positive security selection ability, $a_p > 0$, and 33 funds exhibited negative security selection ability, $a_p \leq 0$. Of the 14 funds with positive coefficients, 11 were statistically significant while none of the funds with negative coefficients were significant. These results would suggests that a number of asset allocation funds (23%) do possess security selection ability and is consistent with the findings of Chan & Chen (1992).

When testing for the presence of market timing ability it was found that 14 of the 47 funds exhibited positive market timing ability $B_2 > B_1$, and 33 funds exhibited negative market timing ability, $B_2 \leq B_1$. It should be mentioned, however, that only 4 of the 14 funds demonstrated statistically significant positive market timing ability.

Additionally, of the 33 funds with negative market timing ability, 26 had B_1 and B_2 that were significantly different from each other. These results would indicate that only a handful (8.5%) of asset allocation fund management actually possess the ability to forecast broad market movements. More interesting though is the idea that a majority (55%) of these funds actually allocate their portfolios in a manner that is contrary to market timing. These findings are also in agreement with those of Chan & Chen (1992).

Looking more closely at the individual funds that exhibit positive market timing ability revealed no clear similarities. A comparison of the funds that possess security selection and positive market timing abilities, however, provided additional insights into management ability; Of the 4 funds that demonstrated positive market timing ability, all had negative intercept coefficients, a_p, although none were significant. Moreover, of the 11 funds that exhibited significant security selection ability, 9 funds had $B_1 > B_2$ significantly different from each other. Consistent with Henriksson (1986), there appears to be a trade-off between market timing and security selection abilities.

Conclusions

Although a majority of the 47 actively managed funds examined out performed the passively managed S&P 500 composite index on a risk-adjusted basis, this performance is not a result of the management possessing the forecasting abilities needed to facilitate active management strategies such as market timing and security selection. Furthermore, the results suggest that there exists a trade-off between the two abilities: Funds that are able to earn superior returns through asset selection tend to have negative market timing ability. If one ability comes at the expense of the other, this draws

Table 2
Tests of Forecasting Ability

Fund	Parameter	Estimate	Fund	Parameter	Estimate	Fund	Parameter	Estimate
1	ap	-0.26147	17	ap	0.15586	33	ap	0.057079
	B1	0.64247***		B1	0.74883***		B1	-0.1575
	B2	0.96402***		B2	0.71430***		B2	0.00928
2	ap	0.71586***	18	ap	0.60517*	34	ap	0.58383
	B1	0.45819***		B1	0.67161***		B1	0.41019**
	B2	0.26558***		B2	0.35149***		B2	0.81331***
3	ap	-0.04542	19	ap	0.42675	35	ap	-0.42771
	B1	0.39381***		B1	0.55247***		B1	0.30308*
	B2	0.44765***		B2	0.42985***		B2	0.76976***
4	ap	-0.0288	20	ap	0.24051*	36	ap	-0.21767
	B1	0.36375***		B1	0.65813***		B1	0.8164***
	B2	0.26495***		B2	0.60858***		B2	1.00711***
5	ap	1.13464	21	ap	0.1095	37	ap	0.27587
	B1	1.47537***		B1	0.70338***		B1	0.69420***
	B2	0.31893		B2	0.63562***		B2	0.67235***
6	ap	0.42934	22	ap	0.30341	38	ap	0.40049*
	B1	0.67777***		B1	0.55273***		B1	0.68097***
	B2	0.40994***		B2	0.53157***		B2	0.41372***
7	ap	-0.03042	23	ap	-0.16521	39	ap	0.24901
	B1	0.24560**		B1	0.56680***		B1	0.54895***
	B2	0.26751***		B2	0.72325***		B2	0.46874***
8	ap	-0.5346	24	ap	-0.15081	40	ap	0.93049***
	B1	0.28379		B1	0.65418***		B1	0.61656***
	B2	0.80892***		B2	0.70315***		B2	0.40857***
9	ap	0.62733**	25	ap	0.54543*	41	ap	0.29238
	B1	0.71351***		B1	0.08702***		B1	0.60395***
	B2	0.55819***		B2	0.07353*		B2	0.49103***
10	ap	0.62039	26	ap	0.04718	42	ap	0.34272
	B1	0.18366		B1	0.63110***		B1	0.88994***
	B2	-0.15265		B2	0.63796***		B2	0.92790***
11	ap	-0.40651	27	ap	0.39118*	43	ap	0.95497***
	B1	-0.57470**		B1	0.57503***		B1	0.65790***
	B2	-0.08663		B2	0.41747***		B2	0.32301***
12	ap	0.32629	28	ap	-0.67743	44	ap	0.85904***
	B1	0.70126***		B1	0.49004***		B1	0.65399***
	B2	0.38513***		B2	0.90936***		B2	0.32279***
13	ap	0.68818**	29	ap	0.29969	45	ap	0.0898
	B1	0.66067***		B1	0.58120***		B1	0.33640***
	B2	0.45555***		B2	0.51940***		B2	0.30025***
14	ap	0.41122	30	ap	0.54445	46	ap	0.61787
	B1	0.53102***		B1	0.66967***		B1	0.73024***
	B2	0.37810***		B2	0.40294***		B2	0.31510**
15	ap	-0.0988	31	ap	0.1339	47	ap	0.22292
	B1	0.55178***		B1	1.10085***		B1	0.78317***
	B2	0.53061***		B2	0.65397***		B2	0.38996***
16	ap	0.74385	32	ap	-0.24182			
	B1	0.92413***		B1	0.96020***			
	B2	0.42341***		B2	0.58362***			

***Significant at lambda < .01, **Significant at lambda < .05, and *Significant at lambda < .10.

into question the use of such active management strategies and the size of the fees levied on shareholders for this type of management.

The findings, however, do not indicate that the managers of these funds are without any skill. Their risk-adjusted performance above the passively managed S&P 500 is a testament to their ability to increase expected return while reducing risk. Their ability to reduce portfolio risk can be attributed, in part, to the broad asset composition of asset allocation funds. By expanding their portfolio holdings to include foreign debt and equity, U.S. debt, real estate and precious metals securities, asset allocation funds are able to exploit the lack of correlation between securities returns and reduce the risk levels of their portfolios.

This study also reaffirms the principals of diversification and suggests investors should keep in mind the correlation structure of markets. The implication here is individual investors themselves should concentrate on establishing a portfolio that contains as many different asset classes as possible. Investors should look to diversify their portfolios with not only domestic equity, debt, and money market securities but also with foreign and other types of securities that are not tied to the U.S. market and offer some protection against its fluctuations.

The results also indicate that because a number of these funds do live up to their claims of providing investors with good returns at lower-than-average risk levels, investors could potentially benefit by purchasing these funds. However, due to the fact that 23% more funds had risk-adjusted performance above the S&P 500 when ranked by the Treynor Index than by the Sharpe Index, the results imply that, collectively, these funds would make better components of an investor's portfolio, as opposed to an "all-in-one" investment. Recall that a portfolio's risk, Bp, is a weighted average of the B_i's of its component securities. Due to their ability to lower systematic risk levels, B_p, the inclusion of an asset allocation fund in an individual investor's portfolio would have the affect of reducing the volatility of a portfolio of funds. Furthermore, by including these funds as a component of their portfolios, investor's can diversify their portfolio across fund managers and reduce some of the risk associated with the uncertainty of the abilities of the management of these funds. This reduces the downside impact of an individual managers performance on the portfolio as a whole.

Acknowledgments

I would like to express my extreme gratitude to my thesis advisor Dr. Cyrus Ramezani, and to Dr. Robin Douthitt, Dr. Cindy Jasper, Dr. Karen Holden and the rest of the faculty at the University of Wisconsin, Madison for their comments and encouragement.

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Endnotes

1. James Macdonald Thalacker received his Master of Science degree at the University of Wisconsin, Madison in 1995. He is currently a quantitative analyst at: Dean Witter Reynolds, Inc. Equity Research 2 World Trade Center - 63rd Floor New York, NY 10048
2. Morningstar Inc. is an independent, privately owned company, which provides investors with information concerning the return performance, risk, portfolio composition, analyst's opinions, and recent developments on the mutual funds that it tracks.
3. The CAPM was simultaneously and independently discovered by Lintner, L. (1965a), Mossin, J. (1966), and Sharpe (1964).

4. The total return is calculated by taking the change in monthly net asset value (NAV), reinvesting all income and capital-gains distributions during that month, and dividing by the starting NAV. The net asset value (NAV) of a fund is the price at which investors can purchase, or redeem, one share of a fund.
5. A bull (bear) market is observed when the return on the S&P 500 composite index is persistently above (below) that of the 90 day U.S. Treasury bill.
6. For a detailed discussion of this principal see Markowitz (1952).
7. In tests of the CAPM, Black, Jensen & Scholes (1972) developed a time-series CAPM that can be estimated using ordinary least squares regression. For a more detailed discussion of this model please refer to their paper.